# **MISSOURI**

# STATE BOARD OF HEALTH



# QUARTERLY BULLETIN

#### **NEW SERIES**

VOL. 4.

JANUARY-MARCH, 1914.

No. 1.

#### MEMBERS OF THE BOARD

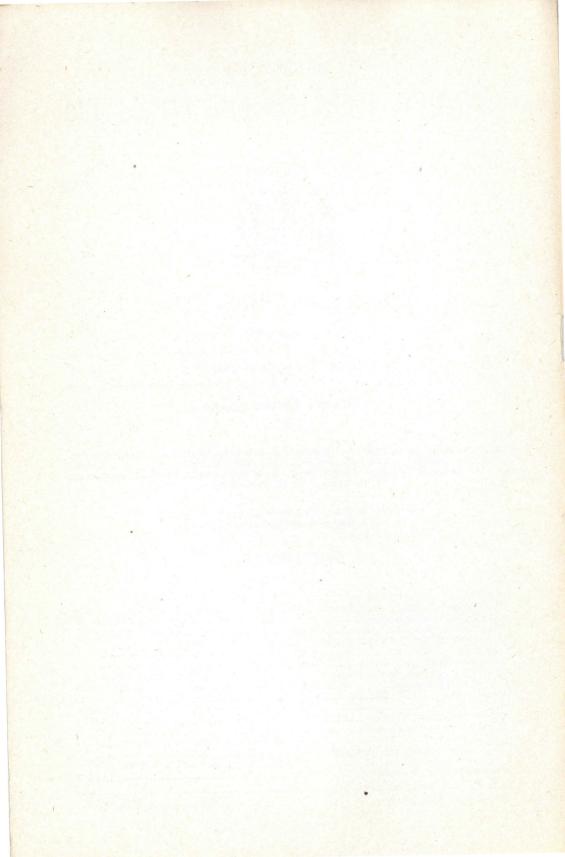
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## BULLETIN OF THE

# Missouri State Board of Health

**NEW SERIES** 

VOL. 4

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No. 1

## Importance of Correct and Prompt Reports of Vital Statistics.

We once more urge upon our local registrars, and physicians as well, the great importance of securing the registration of every birth and every death in the State, and sending the certificates in to the central office properly filled out. To be of use in the office every detail on the blank certificate must be properly filled. The local registrars should see to it that no certificate is sent in to the central office until it is properly made out. We must see to it that every child that is born in this State is properly registered; we owe this to the child, for it will mean so much to it in after years; its right to vote and to inheritance may be challenged; if so, this record is *prima facie* evidence acceptable in all of the courts.

The death certificates should be promptly sent in on the 10th of each month of all who died in the preceding month. Promptness in this matter is of great help often to the widow or small children who are depending upon a pension or insurance policy for sustenance.

We must first know the exact number born and the exact number who die, at what age the deaths occur and cause of death; this gives a basis for work. The knowledge gained is something wonderful—often very surprising. In Missouri the average number of births in the last three years has been 74,741. Of this number 10,-185 do not live to be four years old; 6,884 die before they reach one year of age; 4,532 die before they are two months old; 3,321 die before they reach one month; and 2,342 do not live one week.

These are startling figures and should be materially cut down all along the line. No doubt many of those who die under one week were of low vitality and did not have the proper prenatal care, or

proper care at birth and subsequent neglect. Many of the weaker children drop off under one month. Others with poor resistive powers, yet stronger or placed in better environments, live on and fall before some contagious disease of which it is an easy prey, or live to die from the never ceasing Colo-Enteritis, a disease in which the ever present housefly cuts a very important figure, as well as improper feeding.

In order that these little ones may be properly cared for, I am following this with an article gotten up by the best medical talent in the world, prepared by a committee of the American Association for the Prevention of Infant Mortality and presented to the Association at its annual meeting in Washington, D. C., November 14-17, 1913. Published by the United States Health Service in public health reports.

Doctors, nurses, midwives, mothers, all should read and preserve this article for reference. Remember we arrive at the necessity of stamping out diseases only through a correct compilation of vital statistics.

J. A. B. A.

## The Care of the Baby.

## I. SOME IMPORTANT TRUTHS.

- 1. It is easier, better, and cheaper to prevent than to cure disease.
- 2. Everything that protects the mother before her baby is born improves the health of the baby after its birth.
- 3. Many of the diseases observed in older children and adults begin in infancy.
  - 4. Healthy babies make strong men and women.
- 5. The baby's food, home, and surroundings play an important part in keeping it well or making it sick.
  - 6. Mother's milk is the best food for babies.
- 7. Cow's milk which has become infected with disease germs kills many babies.
- 8. Extreme heat and impure air kills many babies in the summer, especially bottle-fed babies.
- 9. The health and happiness of the whole household are improved by everything done to protect the baby.

# II. GENERAL SUGGESTIONS FOR THE CARE AND FEEDING OF INFANTS.

#### MOTHER'S MILK-NATURE'S FOOD.

- 1. The most loving act a mother can do is to nurse her baby. When the baby nurses, it not only gets the best food, but it is less liable to many diseases, such as "summer complaint," convulsions and tuberculosis. Out of every 100 bottle-fed babies an average of 30 die in the first year, while of the breast-fed babies only about 7 out of every 100 die in the first year.
- 2. Nearly every mother can nurse her baby during the first 3 or 4 months of its life, and if she can nurse it for 10 months, so much the better.
- 3. There may be an abundant supply of milk after the first few weeks, even if there is but little at first; the act of suckling causes the milk to come into the breasts, and increases the supply. It is very important that the baby nurse regularly.
- 4. If the baby is too weak to nurse, a healthy infant can be used to excite the flow of milk until the baby has grown strong enough to nurse. This should not be done without a physician's advice.
- 5. The only way to tell how much food the baby is getting is to weigh it before and after each nursing for at least 24 hours. The clothes need not be removed, but the baby should be dressed in exactly the same way when weighed after nursing as before. (If the baby should soil its diaper after the first weighing do not change it until after the second weighing.) In case the baby is not getting enough breast milk, the quantity lacking should be made up by properly prepared cow's milk. Let a physician decide this. This may be only a temporary shortage on the mother's part, and with suitable care the milk will probably increase so that the baby will eventually be satisfied with the breast only.
- 6. The following things influence the milk supply: Peace of mind is necessary for the mother; she must not worry; she should not get overtired. She should eat freely of her customary diet. The total quantity of fluids taken by her in 24 hours should not be less than 2 quarts; in hot weather more. Stuffing, however, is unnecessary and undesirable.
- 7. Consumption in the mother is practically the only disease that always forbids nursing. Paleness, nervousness, fatigue, pains

in the back and chest, or the return of the monthly sickness are not sufficient reasons for weaning, but when these symptoms are present or pregnancy ensues a physician should be consulted at once.

8. Shortly after birth, boiled water, without sugar, may be given to the baby at regular intervals until the mother's milk supply is established. The baby, however, should be put to the breast at stated times, as often as the mother's condition permits.

IMPORTANT POINTS TO BE REMEMBERED IN NURSING THE BABY.

It is always wise to make nursing as easy as possible for the mother and to give her opportunities for rest. Therefore, the sooner the baby is satisfied and gaining on three-hour or even four-hour intervals the better.

Convenient hours for nursing the baby are as follows:

- (1) Seven nursings in 24 hours: 6 a. m., 9 a. m., 12 noon, 3 p. m., 6 p. m., 9 or 10 p. m., and once during the night.
- (2) Six nursings in 24 hours: 6 a. m., 9 a. m., 12 noon, 3 p. m., 6 p. m., and at the mother's bedtime; or at 6 a. m., 10 a. m., 2 p. m., 6 p. m., 10 p. m., and once during the night.
- (3) Five nursings in 24 hours: 6 a. m., 10 a. m., 2 p. m., 6 p. m., 10 p. m., or later.

The baby should be offered cooled boiled water between feedings, especially during hot weather.

The length of time for a nursing varies with the individual and the breast. The average infant rarely nurses longer than 15 minutes. The important point is to satisfy the baby. If there is any doubt, let it nurse longer, but not more than 20 minutes. If it is not satisfied after 20 minutes, consult a physician.

It is customary to nurse only one breast at each feeding, and to use them alternately. If, however, the baby does not get enough from one breast, give it both.

It is important to keep the nipples clean; they should be washed before each nursing. Caked breasts or cracked nipples are the usual causes of breast abscesses, and although they may be harmful to the mother they do not make the milk poisonous for the baby. In both instances consult a physician.

#### III. WEANING.

The baby should be completely weaned at the end of the first year. Up to this time breast milk should be given to the baby as long as it thrives. It is better, when possible, to continue nursing through the summer and to wean in the fall. It is better to wean in the summer than in the spring, if by doing so the baby can have breast milk longer.

Do not wean the baby suddenly; it should be done gradually by replacing one breast feeding at a time with a bottle feeding. Several weeks are required for weaning.

It is dangerous to wean a young baby. It should not be done for the convenience of the mother and should never be done without the advice of a physician.

Contagious disease in the mother does not mean that it is necessary to wean the baby. In case of severe illness, contagious or otherwise, a temporary weaning may be necessary for the mother's sake. A physician should decide this. As soon as the mother's condition permits, the baby should be put back on the breast. The supply of breast milk can sometimes be brought back by putting the baby regularly to the breast for several days, even when nursing has been stopped for several weeks.

#### IV. MIXED FEEDING.

When the mother's milk is diminishing it is advisable to make up the lack with properly prepared cow's milk. This may be done either by following one or more breast feedings with enough modified milk to satisfy the baby or by giving one or more full bottle feedings in place of a like number of breast feedings.

The flow of breast milk tends to diminish when the baby nurses less than five times in 24 hours. When the baby is being nursed once every 4 hours and is not satisfied, it is better to give him after nursing enough modified milk to satisfy him, rather than to replace a nursing with the bottle. If, on the other hand, shorter intervals and more feedings are being used, a bottle feeding may take the place of a nursing without so much danger of decreasing the milk supply. Most babies need additional food after the seventh month.

#### V. BOTTLE FEEDING.

Cow's milk is the most satisfactory substitute for mother's milk. The best milk (this does not mean the richest milk) is none too good. Get "certified" milk if possible. If you cannot obtain certified milk, get the cleanest and purest bottled milk you can find. Milk sold in bulk, or bottled from the can in stores, or by milkmen in their wagons, is likely to be stale and contaminated and not a proper food for the baby, even though it looks and tastes good. "Baby foods" and condensed milks and the like are not satisfactory substitutes for good cow's milk and often harm the baby.

Raw milk may carry the germs of tuberculosis, scarlet fever, tonsilitis, diphtheria, typhoid and other communicable diseases. Unless the milk is above suspicion, danger should be prevented by proper pasteurization of the milk or by boiling or by sterilization.

Pasteurization.—Pasteurization means heating the milk to about 150° F. for 30 minutes and then rapidly cooling it. Milk for the baby should always be pasteurized in the feeding bottle. It may be done as follows: The milk should be mixed and poured into the clean feeding bottles, which should then be stopped with clean, non-absorbent cotton. It is then ready for pasteurization. While a number of satisfactory pasteurizers may be bought in the shops, a homemade pasteurizer can be easily constructed.

Take a wire basket that will hold all the nursing bottles for 24 hours and place this basket containing the bottles in a vessel of cold water filled to a point a little above the level of the milk. Heat the water and allow it to boil for five minutes. Then run cold water into the vessel until the milk is cooled to the temperature of the running water. The milk is then put into the ice chest, which should be not warmer than 50° F.

Sterilization.—By sterilization of milk is meant the process of rendering it germ free by boiling it on 3 successive days or by keeping it for 15 minutes under pressure at a temperature of 242° F.

Boiling.—Milk is boiled for one or two minutes in a large vessel and poured immediately into the sterilized bottles, stoppered with cotton, rapidly cooled in running water, and put on the ice. This destroys all living bacteria, but not spores or eggs, which will not do harm unless the milk is kept too long after boiling. It should be used within 24 hours.

If the baby's milk is to be mixed with other ingredients, such as oatmeal, barley water, rice water, sugar, etc., these should be added to the milk before pasteurization, boiling, or sterilization. When the milk is once prepared, the bottle should not be opened until it is given to the baby.

Preservation of the baby's milk.—After the baby's milk has been prepared, it is very important that it should be kept cold until it is used.

A simple ice box can be made as follows: Procure a wooden box about 18 inches square and 12 inches deep. Get two tin boxes, one about 11 inches square and 9 inches deep, the other 10 inches square and 9 inches deep. Cracker boxes will do. Cut the bottom

out of the larger box. Place 3 inches of sawdust in the wooden box. Put the larger bottomless box upon the layer of sawdust and fill the space between the wooden and the outer tin box with sawdust. Fasten the pieces forming the lid of the wooden box together with cleats nailed on the outer surface. Tack about 50 layers of newspapers cut to the size of the wooden box to the inner surface of the lid. Make hinges for the lid by tacking two strips of leather onto the outside of the box and then tack additional strips of leather to the front edge of the lid to catch on nails driven into that side of the box, in order to hold the lid down tightly. The ice box is now ready for use. Into the smaller tin box put your wire basket containing the filled and stoppered nursing bottles (or a quart and a pint bottle of milk) and surround them with cracked ice. Place the smaller tin box inside the larger and close the lid. Each morning remove the inner box, pour out the water, clean, and repack with ice. Keep the ice box in a cool, shady place.

This ice box, if properly cared for and kept full of ice, will keep a day's supply of milk cool and sweet.

PRECAUTIONS TO BE OBSERVED IN PREPARING THE BABY'S FOOD.

Everything that comes in contact with the baby's food must be clean. The hands should be washed with hot water, soap, nailbrush, and dried with a clean towel before touching anything that goes into the baby's mouth. The dishes used in preparing the food should be boiled and allowed to dry from their own heat. Do not use a dish towel.

Bottles.—As soon as the baby has finished his feeding throw out any remaining milk, rinse the nursing bottle, and fill it with cold water. When ready to prepare the milk for the next 24 hours, empty the bottles, wash them thoroughly with hot soapsuds and a bottle brush, and then rinse and boil them for 15 minutes. The bottles are then ready for filling.

Nipples.—Only nipples that can be kept clean easily should be used. They should be turned inside out, scrubbed, cleansed, and boiled. After boiling they should be kept covered in a clean, dry glass. Dirty nipples should not be kept with clean ones. Never use nipples connected with long glass or rubber tubes.

DIRECTIONS FOR THE BOTTLE FEEDING OF BABIES.

Complete instructions for bottle feeding cannot be given in a booklet like this. Babies that are artificially fed should be under the supervision of a physician, who should see them at regular in-

tervals. Very young babies, or those that are not thriving, should always be seen once a week, while older healthy babies should be seen at least once a month, whether they are sick or well. The following rules and suggestions apply to all bottle-fed babies.

Before feeding warm the food to blood heat by putting the bottle in a vessel of warm water. Do not test the temperature of the milk by putting the nipple in your own mouth, but sprinkle a few drops on the inner surface of your arm. Be careful not to allow the food to become too hot and see that it does not cool too much while the baby is nursing. This can be prevented by wrapping the bottle in a piece of flannel.

Hold the bottle for the baby throughout the feeding. Do not coax the baby to take more food than it wants, and do not allow it to drink longer than 20 minutes from the bottle. If it takes longer, there is something the matter with the baby or with the nipple.

If there is any food left in the bottle, throw it away; do not give it to the baby later.

Convenient feeding hours are the same as those for the breast-fed babies. (See p. 5.)

When the baby has diarrhea, either with or without vomiting, stop all food at once. Give it one or two teaspoonfuls of castor oil, allow it to have plenty of boiled water to drink, and send for a physician immediately. Save the soiled diapers for the physician to examine. (Always keep them covered.)

If the baby refuses to drink unsweetened, cooled, boiled water, give it barley or oatmeal water.

Be sure to wash the hands thoroughly after changing a diaper and before preparing food. Boil all the soiled diapers for half an hour to kill the dangerous germs which might spread the diarrhea among the other members of the household. Keep the diapers in a solution of strong disinfectant (2 tablespoonfuls of pure carbolic acid in 2 quarts of warm water) in a covered vessel until ready to boil.

## VI. THE HOME.

The welfare of the baby depends largely upon the condition of its home and surroundings.

Fresh air.—A satisfactory home for a baby should provide plenty of fresh air and sunshine. Much of the baby's time should be spent out of doors after it is 3 months old, on a porch or in the yard. A healthy baby should be kept out of doors at least four hours each day, even in winter except when it is colder than 22° F.

During the summer a newly born baby may be taken out of doors in the first week. During the winter months the baby should be gradually accustomed to the outside air. A good plan is to begin with an outing of 15 minutes at noon and gradually lengthen the time into the forenoon and afternoon, until the baby is out from 10 a. m. until 2 p. m. The baby must be properly clothed, according to the weather.

The surroundings of the home should be free from uncovered garbage, rubbish and manure. All of these attract flies and other disease-carrying insects.

### VII. THE BABY'S ROOM.

A quiet room if possible with a south or southwesterly exposure should be given to the baby. It should be well ventilated at all times. An open fireplace is desirable. The room should contain no upholstered furniture or heavy curtains. The walls and floors should be so finished as to allow frequent wiping with a damp cloth. A porch adjoining the baby's room and running water near by are desirable. The temperature of the baby's room should be kept not higher than 68° or 70° in winter and in summer should be kept as cool as possible with awnings and shutters. The windows should be kept open day and night in summer, and in winter the room should be aired two or three times a day. The windows and doors should be screened against flies and other disease-carrying insects. In the absence of screens, mosquito netting may be tacked on the outside of the windows. The cellar of the house should be dry.

### VIII. CLOTHING.

Improper clothing may be harmful to babies in three ways: First by being so tight that it prevents normal movements; second, by keeping the baby too warm; and, third, by not keeping it warm enough. The first fault can be avoided by making all of the baby clothes loose and roomy. Do not put on so many clothes that the baby perspires. All clothing except the shirt band and diaper may be removed in very hot weather. As the weather grows cooler, other clothing is added. The important thing for the mother to remember is that the baby is very sensitive to both heat and cold. She must be constantly on her guard to keep the baby cool enough in summer and warm enough in winter. The principal object of clothing is to insure a uniform body temperature. Loosely woven material should be used to allow proper ventilation for the skin. The use of a flannel bellyband is necessary until the cord drops off.

After the first month it may be replaced by a knitted band with shoulder straps.

## LIST OF CLOTHES FOR NEWLY BORN BABY.

Three flannel binders (11/2 yards of 27-inch flannel).

Three shirts wool and silk, or wool and cotton.

Two flannel petticoats.

Two flannel or knitted socks (gertrudes).

Two pairs of worsted socks.

Two dozen diapers, 22 by 44 inches.

One dozen diapers, 25 by 50 inches.

Four white muslin slips.

One cloak.

One warm cap.

One pair of mittens.

One veil.

Two blankets.

One box talcum powder.

Two dozen safety pins, large and small.

Two bath towels.

Two soft towels.

#### LATER.

Three pairs of woolen stockings.

Three knitted bands with shoulder straps.

Additional diapers.

## IX. SLEEP.

Every baby needs 20 hours of sleep a day in its first month and not less than 16 up to the twelfth month of its first year. It should sleep alone, not in a cradle, but in a crib. If no crib is available, a clothes basket or a box of sufficient size is a good substitute. An expensive mattress is not necessary. A simple mattress made of excelsior and covered with a heavy blanket will answer very well. A sufficient quantity of clean bed clothing should be provided.

The room should be darkened and well ventiliated; the windows should always be open at the top at least 6 inches, except in the coldest weather. If the baby cries when it should be asleep, it is probably sick, overfed or hungry.

All children should take a nap of from one to two hours in the middle of the day until they are 6 years old.

### X. THE BATH.

Every baby should be bathed at least once a day; during the hot weather two or three sponge baths may be given in 24 hours. The temperature of the bath should be from 90° to 95° F. in the early months. By the end of the first year the temperature may be lowered to 80° to 85° F. If you have no thermometer, a practical test for the correct temperature is to use water that feels warm to the elbow.

When bathing the baby in a tub, let it rest upon your left arm, which is slipped under its back from the baby's right side. By grasping the baby under the armpit with the left hand a good hold is secured which prevents slipping. The right hand is left free for washing the baby. A special wash cloth, preferably of cheese cloth, should be provided for washing the baby's face and head.

After the baby is taken out of the tub it should be dried in a large soft bath towel.

Do not wash a healthy baby's mouth; it will do no good and may do harm. As soon as the baby has teeth, clean them carefully with a soft clean cloth or gauze, and later with a soft toothbrush and cooled, boiled water.

After the baby is dressed it is wise to keep it indoors for at least an hour after bathing and to protect it from drafts.

The best time for bathing the baby is just before its morning feeding, between 8 and 10 o'clock. After its bath the baby will be ready to take its food and go to sleep.

#### XI. WEIGHING THE BABY.

The baby should be weighed regularly at least once a week for the first year and the record of the weight kept in a book. The most convenient time for weighing the baby is before the regular bath in the morning. It is well to remember that the record of the baby's gain in weight will be reliable only if it has been weighed at the same hour each time.

#### XII. THE NORMAL BABY.

An average healthy baby weighs from 7 to  $7\frac{1}{2}$  pounds at birth; 15 pounds at 5 or 6 months, and 21 pounds at 12 months. In other words, the baby doubles its weight in 6 months and trebles it in 12 months.

It is 20 to 21 inches long at birth, 25 to 26 inches at 6 months, and 28 or 29 inches at 12 months.

More rapid gains are noted in the first 6 months than in the second 6 months. The average weekly gain is about 4 ounces.

It sleeps soundly.

Is happy, active and enjoys using its arms and legs freely.

Begins to follow moving objects with its eyes at the second or third month.

Begins to sit unsupported at the seventh or eighth month.

Cuts its first tooth from the sixth to ninth month; has about 6 teeth at 12 months, 12 teeth at 18 months, 16 teeth at 24 months and 20 teeth at 30 months.

Walks from the fourteenth to the seventeenth month.

The soft spot or opening in the skull closes between the eighteenth and twenty-fourth month.

Begins to say words like "papa" and "mamma" after the twelfth month, and simple, short sentences at the close of the second year. Children, however, that are otherwise perfectly normal may not begin to speak until a year later than the time stated above, or may present variations from any of the above.

## XIII. CONTAGIOUS DISEASES.

The spread of most contagious diseases is caused through ignorance or carelessness. In as much as contagious diseases often cannot be distinguished from the noncontagious, it is wise to separate children from every sick person, young or old, until the true nature of the illness is known. If the disease is contagious, the separation must be kept up. This separation consists in placing the patient in a room by himself and giving him separate wash cloths, towels and dishes. One person only should care for the patient, and the clothing of this person should be protected by a gown or long apron or sheet when in the patient's room. After caring for or handling the patient the caretaker's hands should be carefully washed with warm water and soap.

Every person should co-operate to the fullest extent with the local department of health in its efforts to limit the spread of communicable diseases. Do yourself what you would desire of another parent whose child might be a source of danger to your own family.

So-called colds, such as running nose, sore throat, bronchitis and the like, are easily communicated to children and may be especially serious for the baby.

Do not sneeze or cough in the baby's face. A mother should protect the baby from catching her own cold by tying a handker-chief or piece of cheesecloth over her nose and mouth when nursing or caring for her baby. She should not kiss the baby.

Tuberculosis very often gets it start in infancy. Every effort, therefore, should be made to protect the baby from infection. Common ways of infecting the baby are by kissing it, coughing or sneezing near the child, or by allowing it to sit on the floor where it has a good chance to pick up tuberculosis germs with the dust on its toys or other objects and thus get them into its mouth. It is a good plan to have a separate room or at least part of a room fenced off as the baby's play room, and to cover the floor with a clean sheet each day. Milk from tuberculous cows may also be the cause of tuberculosis in the baby.

## XIV. EYE DISEASE AND BLINDNESS.

Many babies within two or three days after birth, occasionally later, have what is commonly known as "sore eyes" or, as the mothers say, "have caught cold in their eyes." The proper name for this condition is ophthalmia, and it is caused by a germ getting into the eyes during the baby's birth. The eyelids become reddened and swollen and in a very few hours pus is seen in abundance. All such cases must be energetically and skillfully treated at once by trained physicians. Neglect and carelessness may result in the loss of the baby's sight. The condition can usually be prevented if the physician puts a drop of proper antiseptic in each eye immediately after the birth.

#### XV. VACCINATION.

Do not forget that the earlier the child is vaccinated, the sooner it is protected against smallpox. In this country it is not possible to know when and where an outbreak of smallpox will take place. It is well, therefore, to be prepared.

The best time to have a baby vaccinated is in its first year. If the baby is healthy it may be vaccinated as early as the third or fourth month.

#### XVI. BIRTH REGISTRATION.

See that your doctor registers your baby's birth as soon as possible after it is born. Birth registration secures citizenship and may save future legal trouble.

### XVII. PRENATAL CARE.

By this is meant the care and advice given to the mother before the birth of the baby, in order that she may fit herself to bear and to care for it.

There is no doubt that the welfare of the baby depends largely upon the mother's health and that many mothers would be better able to nurse their babies if they had proper care, food, clothing and exercise before the babies were born.

In order to secure the proper advice as early as possible, every prospective mother should consult a physician as soon as she knows she is to have a baby. If she can not afford the services of a physician, she should apply to a maternity hospital or dispensary where competent physicians and nurses are ready to advise and care for her until the baby is born.

If, for any reason, the prospective mother cannot see a competent physician at least once a month during her pregnancy, she should send a specimen of her urine to him regularly each month. She must drink enough liquid so that she will pass at least 3 pints of urine each 24 hours. Her bowels should move once a day. Persistent or sudden and severe headaches, swelling of the face or hands, increasing swelling of the ankles must be reported at once to the physician in charge. Any appearance of blood from the vagina demands instant summoning of the physician. As soon as a woman knows she is pregnant she should go to the dentist and have her teeth put in good condition.

The above statements are the merest outlines of the fundamental care which every woman should have. It must be remembered that if the prospective mothers are intelligently supervised and will report all untoward symptoms at once deaths and disabilities of both mothers and children will be less frequent.

## Records in Office of Board of Health.

All matters of record in the office of the State Board of Health are open for the inspection of any citizen of the State who may desire to use the same, or a copy of any record may be sent to one who wishes the same by paying the Secretary a fee for it. The fee in all cases goes into the General State Fund.

Petitions and letters sent into the Secretary's office are private communications for members of the Board of Health only and will be treated as such by the Secretary, unless the nature of the communication is such that the Board may deem it wise and proper to make public record of the same.

This will save many the trouble of writing for copies of letters and petitions that are sent into this office.

J. A. B. A.

#### Rural Sanitation.

By Dr. R. L. Wills, Neosho.

In the early history of the world, when the soil and the water were pure, when animal life was in its infancy, as compared to the present, sanitary science was unknown, and indeed there was not much necessity for sanitation; but as man and all other forms of animal life began to "multiply and replenish the earth," and as cities and towns began to spring forth and as the rural districts became more and more thickly settled, the earth became polluted and the water impure, and diseases, hitherto unknown and unheard of, developed and spread death and desolation on every hand.

It was then that the cause of these diseases began to be sought for, and the physician labored day and night to find out not only remedies, but ways and means of prevention. The sanitarian became an important factor in preventive medicine, and today we, as a medical profession, feel that we can point to their achievements and exult with the greatest pride.

It would take many volumes to tell what the world owes to his patient and unselfish research.

But while the world has advanced along these lines, especially in the cities and thickly settled communities, the rural districts have not appreciated the importance of sanitary science, and the wonderful possibilities in conserving the health and happiness of a community, by a knowledge and observance of its teachings.

We attach far less importance to the influence of the air as a means of communicating disease than our fathers did, for we know now that food, water and dust are the main avenues by which pathogenic organisms gain entrance to our bodies and bring about their special forms of disease.

In the rural districts we are confronted with the problem of soil pollution to a far greater extent than the inhabitants of the city. We do not have the fine sewerage systems found in the large municipalities. We have, also, the constant pollution of fields and pastures by live stock. It would take longer than the purpose of this article warrants to enumerate the difficulties we of the rural districts have to contend with, but I must mention one of the great menaces to public health—I refer to the insanitary privy.

In all the country school districts we find an absolute disregard for the simplest rules in regard to the disposal of excreta. Light and flies have free access to these sources of infection. In some the excreta is deposited on the ground and allowed to spread out and flow some distance from the privy. It is not hard to understand how whole communities may become infected by one of these insanitary privies. A child goes to school suffering with the typhoid fever; he has the bacilli in his system and constantly discharges them from his bowels and kidneys; the excreta falls to the ground where flies and dogs have free access, and by these visitors to the insanitary depositories infection is carried to the helpless and the unsuspecting.

Typhoid is and should be considered a reproach to any community, for it is a disease of filth, and indicates a carelessness or ignorance on the part of the public. With painstaking effort this dangerous malady should be eliminated, and known only historically.

I do not mean to say that typhoid is the only disease contracted as a result of the insanitary privy, but we all realize the menace of the typhoid carrier, even after the doctor pronounces him well, and he is once more in his accustomed place at school.

Dysentery and even tuberculosis may be communicated by this same means.

Space will not permit me to enumerate the different diseases which may and, indeed, are contracted as a result of exposure to the parasites and bacilli from these insanitary places.

It is possible to have a sanitary privy, strange as such a statement may seem, and as briefly as possible I shall describe one. First of all there should be a receptacle for the excreta and it should be of such material and construction as not to permit the leakage of fluids. In a box close by should be lime, and this should be freely sprinkled over the excreta. All light should be excluded from the receptacle and all should be absolutely fly proof. If light and flies are not excluded the undertaking is a failure.

At regular intervals the dejecta should be taken away and

burned. It should not be buried or thrown into any stream whatever, as in this way whole communities may become infected.

This is, in my opinion, the simplest form of a sanitary privy for the country school and church.

That the farmer should be as careful and as sanitary in all things about his home, needs no affirmation from me. Butter, milk, fruits and vegetables come to us from the farm, and the responsibility of keeping and delivering these commodities pure and wholesome rests on the producer. If insanitary conditions are on the farm it will be hard to have pure and sanitary products.

## Sanitary Conditions of the Missouri State Penitentiary.

By Geo. L. McCutchan, Prison Physician.

In the first place considering the abnormally crowded condition of the prison, with steadily increasing numbers and decreasing cell room, the general health of the inmates is fully up to, if not above, any previous standard set. At the same time there are a number of improvements urgently needed in order to remedy important defects in the present health conditions, to bring them up to the requirements of the present medical standard and to combat future conditions likely to prevail at any time, with the inadequate cell room, due to the razing of one of the old cell buildings, known as "B Hall," for the construction of a new and modern cell block.

"A" hall, as it is known, was built in 1868, without plumbing, where there are six prisoners in a cell nine by fourteen feet, formerly occupied by four, compelled to use night buckets with their intolerable odors to say nothing of their unhygienic and unsanitary properties. It is an ideal incubator for infectious and contagious diseases, more especially tuberculosis, which causes the greater number of our deaths.

The other old halls, housing the negro population, may be placed in the same category (or worse), having been built earlier and with less regard for sanitation and hygienic properties.

The comparatively new "E Hall" and the Isolation building are models of perfection, containing large roomy cells with modern plumbing and, with a few exceptions, only two prisoners in each cell; also ample shower baths on each floor—the latter having more men in each cell, but sufficient ventilation and air space.

The completion of the new cell building, which will be modern in every respect and now under construction, will relieve this congestion to a great extent, though with the increase yearly in the daily count, I believe that at least another cell building should be constructed soon.

The food supplied the prisoners is wholesome and well cooked, and there can be no complaint from that source. The water is good, and the situation of the grounds facilitates quick, thorough drainage, and the hospital as well as the dining rooms and kitchen are screened throughout.

The female department is a large, airy building, well lighted and ventilated and kept very clean; plumbing throughout and not overcrowded, having only one prisoner in a cell and perhaps only a third of the cells occupied.

I earnestly recommend the erection of a suitable hospital for the isolation and treatment of tubercular patients as well as the criminal insane.

Our facilities for combating the Great White plague are rather limited under present conditions. Every patient is a menace to the health of every individual around him. The criminal insane are now transferred to one of the State hospitals, while if suitable quarters for their detention and treatment could be had within or without the grounds of the institution, it would not necessitate their association with patients not criminals.

Considering also the moral side of the question, one of the greatest steps forward would be the erection of an intermediate reformatory for the first offense prisoners below the ages of twenty-five or thirty years, where they would not come in contact with the contaminating influences that prevail within the walls of almost every prison of the country.

Imprisonment under present conditions, except in a few instances, does not accomplish the desired object, consequently if it was not for the work of the Board of Pardons and Paroles, which permit so many good men to have the opportunity to redeem themselves, it would be an entire failure.

Probably eighty per cent of the arrivals give histories of some venereal trouble. There are many syphilitics and these at least should be segregated, if it were possible to do so. Those giving the faintest history of this disease should have the Wasserman test on their admission, and on showing positive reaction, could at least be segregated so not to come in direct contact with others, either in work or cell buildings.

Limited time and space will not permit of further comment, though in closing I wish to say that I exercise every precaution

with regard to the prevention of and the spread of any contagious or infectious diseases.

#### Benefits of the Vital Statistics Law.

The provisions of the law are of value in dealing specially with the following problems, viz.:

Of public health.

Of detecting crime.

Of the percentage of deaths to births.

Of claims of descent, affording proofs for property inheritance.

Of the establishment of the fact and cause of death in pension claims and in collecting life insurance.

The establishment of school age.

The establishment of age of consent.

The establishment of the voting age.

The establishment of age in applying the child labor laws.

## IMPORTANCE OF PUBLIC HEALTH AND VALUE OF HUMAN LIFE.

At this time we will briefly discuss public health and value of life. The primary duty of the State is not only to protect the life and property, but the health of its inhabitants. How true it is, bad health too often means misery, want, death.

There is an increasing recognition of the fact that human life is more important and valuable than animal life, even if pedigreed. If as many valuable animals or fowls of any one species died in proportion to their number as compared to the men, women, and especially children, who die each year, a cry would be heard from one end and side of this great State to the other, for government investigation and immediate relief by State legislation, even to calling a special session, as was demanded of Governor Marmaduke when pleuropneumonia infected Jersey cows, killing a few valuable ones. A remarkable fact, this occurred some twenty-five years before the vital statistics law was passed, which was enacted in 1909.

#### PREVENTABLE DISEASES.

Many believe that Missouri has more beneficial resources, is more healthful and habitable than any other state in the Union. This may be true by comparison. Yet we are confronted with the fact of the 42,056 deaths last year, one-half being of preventable diseases. Take for instance typhoid fever; if it is true as some believe that typhoid fever is the educational standard of a community,

city or state, we are confronted with the fact that in 1912 the death rate from typhoid fever was 23.96 per 100,000, in 1913 the rate was 25.35 per 100,000; when we realize the immense financial loss alone caused by sickness and death, in wages, the cost of doctors, drugs, nurses and other expenses to those afflicted with preventable diseases, or who die before they should, amounts to far more each year than the revenue of the State, which is over \$8,000,000 yearly. If this vast sum of money was proportioned among all the men, women and children of Missouri, it would approximate ten dollars per capita each year.

Those who love the dollar more than the man might stop and consider.

#### GOVERNMENT CENSUS.

The United States Government census furnishes us with the fact that in the last ten years 2,500,000 children died under one year of age. Missouri has been a state nearly one hundred years; yet has less than one-third more in population than the number of children who have died in the United States in ten years under one year of age. Of this vast army of innocent helpfulness, Missouri has contributed her quota. In 1913 we had reported to this department 42,056 deaths; that means for each day of the 365 over 115 persons died. How many would have lived if they could have had proper care and the sanitary conditions had been more healthful?

Is it not lamentably true that many mothers have a better knowledge and take more interest in fashions, pink teas, picture shows and tangoes than they do in the health and life of their children?

T. P. R.

#### HOME.

"I turned an ancient poet's book, And found upon the page, 'Stone walls do not a prison make Nor iron bars a cage.'

Yes, that is true,
And something more;
You'll find where'er you roam
That gilded walls
And marble halls
Will never make a home.

But every house where Love abides
And Friendship is the guest
Is truly home,
And home, sweet home,
For there the heart can rest."

#### Self-Confidence.

Prayer of John, four years old:

"God take care of papa and mamma and grandpa and Blanch and Lula and my little kittie, amen."

The kittie died. John was broken up with grief till he found another kitten, but cut his evening prayer short with his "amen" before he got to the kitten. His mother asked him if he had not forgotten his kitten. Said he, "No, I've not forgot. I'm goin' to take care of this'n myself."

## The "Falling Star."

Some years ago David Barker, a distinguished poet in the state of Maine, after the birth of his first child wrote and published the following pretty poem:

"One night as old St. Peter slept
He left the door of heaven ajar,
When through a little angel crept
And came down like a falling star.

One summer, as the blessed beams
Of morn approached, my blushing bride
Awakened from some pleasant dreams
And found that angel by her side.

God grant but this—I ask no more—
That when he leaves this world of pain,
He'll wing his way to that bright shore
And find the road to heaven again."

John G. Saxe, deeming that injustice has been done St. Peter, wrote the following St. Peter's reply:

"Full eighteen hundred years or more
I've kept my gate securely fast;
There has not 'little angel' strayed
Nor recreant through the portals passed.

I did not sleep, as you supposed,
Nor left the door of heaven ajar,
Nor has a 'little angel' left
And gone down with a falling star.

Go ask that blushing bride and see
If she don't frankly own and say
That when she found that angel babe
She found it in the good old way.

God grant but this—I ask no more—
That should your number still enlarge,
You will not do as done before
And lay it to old Peter's charge."

## REPORT OF STATE BACTERIOLOGIST.

The following table summarizes the work of the laboratory for the first quarter of 1914:

	Tuberculosis (sputum)	Typhoid	Diphtheria	Water	Gonococcic in- fection	Malaria	Rabies	Tuberculosis (not sputum)	Miscellaneous.	
January February March	218 194 284	57 24 39	58 30 25	37 31 18	10 10 12	3 4 4	3 1	4 6 6	16 6 17	
Totals	696	120	113	86	32	11	4	16	39	
Grand total  Tuberculosis "sputum," per ce Typhoid, per cent positive Diphtheria, per cent positive.	ent pos	itive.								23.9 22.5 42.5

## Sputum Specimens.

As a means of protection to the public health it is necessary that all specimens of sputum to receive examination must arrive at the laboratory in containers provided for that purpose by the State Board of Health.

## Preparation of Specimens for Sending to the Laboratory.

Sputum.—Regulation sputum outfits may be obtained by addressing the State Bacteriologist, Jefferson City, Missouri. Full directions accompany each outfit. Physicians are urged to use this means of sending specimens to the laboratory.

Blood.—It is impossible to examine a single specimen of blood for both typhoid and malaria. For the Widall test for typhoid the blood is best obtained by pricking the lobe of the ear with a flat or a three-cornered needle, or the point of a knife. The ear should first be rubbed with cotton and alcohol, then dried, and the needle should be sterile. Two or three good-sized drops should be collected on filter paper provided by the laboratory for this purpose.

For malaria the blood is obtained in the same way, but must be spread in a thin, even smear on a glass miscroscope slide. This is done as follows: A small drop of blood is received onto the slide near one end by touching the slide to the blood as it hangs from the lobe of the ear. The slide is then laid on a firm flat surface, and the end of a second slide, held at an angle of about thirty degrees with the first slide and touching it, is brought into contact with the drop of blood. In two or three seconds the blood will have run across the slide at the point of contact. Then the second slide is pushed along on the first with a moderate speed, so as to leave a thin even smear on the surface of the first slide. A second smear may be made in a similar manner on the other slide. Caution: Have slides perfectly clean, handle only by the edges and work rapidly. Allow them to dry in the air without heat.

Blood should never be placed between slides and sent to the laboratory.

Swabs for Diphtheria.—The regulation tube and mailing case, to be obtained from the county health officer or from the State Bacteriologist, should be used for this purpose. Full directions accompany each outfit.

Water.—Specimens of water are examined for their potability, chiefly determined by the absence or presence of colon bacilli, an index to sewage pollution.

For a total bacterial count it is imperative that all samples be iced from the time of taking until they reach the laboratory. For this purpose special containers may be obtained from the laboratory, express charges to be paid both ways by sender of specimens.

Pus.—Pus, to be examined for gonococci, should be sent on a slide prepared as follows: A small amount—much less than a drop—should be mixed on the slide with a small drop of water and thinly spread over an area a half inch or more in diameter, and allowed to dry. Do not press slides together.

Rabies.—Unless the animal shows symtoms of rabies, it should not be killed, but should be held for observation, in which event, if positive, death will ensue in a very few days, in ample time to begin treatment of the patient. Do not kill the animal by a blow or shot in the head as this may make a proper examination impossible. The head only of the animal should be sent, and that at the earliest possible moment. The head is to be placed in a tin bucket with a tightly fitting cover, which bucket is to be placed in a larger wooden or iron bucket and surrounded by sawdust and iced. The heads of animals freshly killed may be sprinkled with salt, packed in wet sawdust in a strong wooden box and expressed.

*Urine*.—Specimens of urine are examined for tubercle bacilli in suspected cases of genito-urinary tuberculosis.

In sending urine to be examined for tubercle bacilli, the following points should be carefully noted:

- 1. The specimen should be obtained by catheter, and drawn directly into a sterile bottle.
- 2. It should be stated upon the card accompanying the specimen that it was obtained by catheter.
- 3. Two or four ounces of urine should be sent and a preservative should be used.

Feces.—Feces will be examined for tubercle bacilli, and for the ova of intestinal parasites (hookworm). Special containers for this purpose may be obtained by addressing the laboratory.

### The Anti-Rabic Treatment.

The prevalence of rabies and the large per cent of positive results from laboratory examinations has been a subject of inquiry by the State Board of Health and preparation has now been made for the free administration of the anti-rabic treatment. The same is prepared in the Hygenic Laboratory at Washington, D. C., under the supervision of the Surgeon-General of the United States.

These treatments cannot be sent out and will be administered only at the laboratory. Any one desiring the treatment should notify the State Bacteriologist, giving full information regarding history and diagnosis of the case. A lapse of three days should intervene between the notice that treatment is expected and the time when the patient should arrive for administration, as a new supply of material is necessary for each case. The course consists of a daily treatment for a period of from eighteen to twenty-one days.

#### WHEN TO TAKE THE TREATMENT.

The anti-rabic treatment should be taken by the person bitten whenever a microscopical examination of the suspected animal's brain shows the presence of the Negri bodies. These are to be found in the majority of cases of rabies, but should they not be demonstrated in the brain and yet the animal has presented strong clinical symptoms, the preventive treatment should begin at once.

The Pasteur treatment is not a curative but a prophylactic measure, and as soon as the case is diagnosed the sooner administered the better, but awaiting developments a lapse of ten days can be allowed with safety as the incubation period in man is never less than three weeks. In the meantime the wound should be treated with ordinary antiseptics. The cauterization of such wounds is of no avail and is often misleading to the patient.

As a rule an animal will die in from five to seven days after appearance of the rabid symptoms. If after biting the offending animal be isolated for a period of two weeks and shows no further symptoms it is a safe conclusion that it is not rabid. Therefore, if possible always isolate the suspected animal and allow development of the Negri bodies in the brain which will insure the result of a microscopical examination.

## VITAL STATISTICS.

Summary Showing Comparison of Important Causes of Death and Registratration of Births During January, February and March, 1914.

Statistics compiled for the first quarter of 1914, January, February and March, show there was a total of 11,242 deaths. Of this number 6,187 were males, 5,055 females, 10,344 white and 898 black. The month of March showed the greatest number of deaths, 4,108, and February the lowest, 3,461. For the same quarter in 1913 there were 12,200 deaths or 958 more than in 1914. This is a noticeable improvement in the health conditions in the State compared with one year ago.

Pneumonia heads the list of causes of death for the quarter with 1,797, while during the same period in 1913 there were 2,226 fatalities from this disease, or a decrease in 1914 of 429.

There were 1,369 deaths from all forms of tuberculosis, or a decrease of eight compared with the first quarter of 1913.

Notwitstanding the epidemic of smallpox throughout the State only four deaths were reported as a result of this disease. Lawrence county reported one, Buchanan one, Springfield one and Kansas City one. Evidently the low percentage of deaths from this cause is due to more scientific methods and better quarantine regulations adopted by the various local boards of healths, working in perfect harmony with the State Board of Health.

Cancer caused 538 deaths for the three months, or five more than in 1913.

Measles shows an increase of thirty-nine and typhoid fever four compared with the same period in 1913. In fact, there is a slight increase in the number of deaths from all epidemic diseases.

Taking the month of March as a basis there were 2,643 deaths during the quarter of persons over seventy years of age. During March there were 881 deaths of persons ranging in ages from seventy to one hundred and fifteen years. Barton county reported the death of Henry Dorman, age 115 years, born in Hampton, New York, January 10, 1799.

Other important causes of death were: Scarlet fever, 67; whooping cough, 120; diphtheria and croup, 192; influenza, 135; diabetes, 107; epidemic cerebrospinal meningitis, 18; acute anterior

poliomyelitis, 7; other diseases of the nervous system, 726; diseases of the heart and circulatory system, 1,346; other diseases respiratory system, 386; diarrhoea and enteritis (under 2 years), 134; acute nephritis and Bright's disease, 775; puerperal state, 130; accidents, 425; suicides, 151; homicides, 55; other causes, 2,437.

There were 19,043 births reported as having occurred in the State during January, February and March, 1914, of which 9,996 were males, 9,047 females, 18,674 white and 369 black. There were 801 more births than deaths during the quarter.

A comparison reveals the fact that there were 1,220 more births during the first quarter of 1914 than during the corresponding period in 1913.

TABLE SHOWING BIRTHS FILED WITH THE CENTRAL BUREAU OF VITAL STATISTICS DURING MONTHS OF JANUARY, FEBRUARY AND MARCH, 1914, BY SEX AND COLOR.

(STILLBIRTHS EXCLUDED.)

	Total.	Ma	le.	Fen	nale.
Month.		White.	Black.	White.	Black.
January February March	6,395 $6,216$ $6,432$	$3,251 \\ 3,213 \\ 3,357$	59 79 37	3,008 $2,853$ $2,992$	77 71 46
Totals	19,043	9,821	175	8,853	194
Totals by sex.		9,	996	9,	047

TABLE SHOWING DEATHS IN THE STATE FROM TWENTY-FOUR IMPORTANT CAUSES, FILED WITH THE CENTRAL BUREAU OF VITAL STATISTICS DURING THE MONTHS OF JANUARY, FEBRUARY AND MARCH, 1914, (STILLBIRTHS EXCLUDED).

Causes.	Jan.	Feb.	Mar.	Total.
Typhoid Fever	48	35	38	121
Smallpox		3	1	4
Measles		45	117	202
Scarlet Fever	18	11	38	67
Whooping Cough	35	36	49	120
Diphtheria and Croup	77	55	60	192
Influenza	33	43	59	135
Tuberculosis of Lungs	362	402	448	1,212
Tuberculosis of Lungs. Other forms of Tuberculosis.	49	60	48	157
Cancer	181	165	192	538
Diabetes		27	44	107
Epidemic Cerebrospinal Meningitis		5	8	18
Acute Anterior Poliomyelitis	4		3	7
Other diseases of the Nervous System		226	264	726
Diseases of Heart and Circulatory System	456	409	481	1.346
Pneumonia and Broncho-pneumonia	602	560	635	1,797
Other diseases of Respiratory System	120	102	164	386
Diarrhœa and Enteritis (under 2 years of age)	50	33	51	134
Acute Nephritis and Bright's Disease		222	279	775
The Puerperal State	41	46	43	130
Accidents	139	121	165	425
Suicides		46	61	151
Homicides	15	16	24	55
Other causes.		793	836	2,437
Totals	3,673	3,461	4,108	11,242

Births and Deaths Reported in Missouri (Stillbirths Not Included) During the Quarter Ending March 31, 1914.

	Counties.	Adair— January February March	Totals.	Andrew— January. February. March.	Totals	Atchison—January February March	Totals.	Audrain— January February March	Totals.
	ies.								Totals
Pop	ulation, 1910	22,700		15,282	1	13,604		21,687	
Tota	al births during the	42 45 53	140	30 27 18	75	23 15 28	99	22 23 23	98
	al deaths during the uarter	23 12 16	51	15.	30	128	25	19 21 26	99
	Typhoid Fever	i i	1			HH:	:		:
	Smallpox				:   :				:
	Measles				:				
	Whooping Cough		:				:		
	Diphtheria and Croup								:
	Influenza	: :	:	ni k	:			::-	:
	Tuberculosis of the lungs	4000		: :		:: <b>-</b>		814	
	Other forms of Tubercu- losis								1
Iml	Cancer		:	1322		::-		1:2	
orte	Diabetes	<u> </u>	:	:" :	:		:	::"	
unt c	Epidemic Cerebrospinal Meningitis	4							
ause	Acute Anterior Poliomy- elitis	1	:				:	11:11	
o Jo s	nervous system	1			1				:
Important causes of death.	Diseases of heart and circulatory system  Other diseases of the	H · ·	:	: 7			:		:
	Pneumonia, Broncho- pneumonia	666		.47		121		212	
	Other diseases of respiratory system		:		:		:		
	Diarrhœa and Enteritis (under 2 years of age).						:		
	Acute Nephritis and Bright's Disease	23 :17		<b>.</b>		-21	:	40001	
	The puerperal state		1	-:::	1:	::-		:::	
	Accidents			::-	1		:	:03	4
	Suicides				:			<b>-</b> : :	:
	Homicides		1		:		:		

Barry— January February March	 45 38 68	23 24 23						1		253				 	$\frac{3}{1}$	2	3 2 2		. 1	2	$\begin{bmatrix} & & & \\ & & 2 \\ & & 1 \end{bmatrix}$	1 2	<u>.</u>		5 4 7
Totals	 151	70												 											
Barton— January February March	 31 31 26	5			:::	:::	 i		 i		i					1	ī							:.:	3 2 4
Totals	 88	26						.,. ,						 											
Bates— January February March	 53 55 41	24 17 20					2 i	_	i		2 1	1		 	$\begin{bmatrix} \dots \\ 1 \\ 2 \end{bmatrix}$	2 3 2	1 4 6		2			i			11 3 1
Totals	 149	61	,										·	 				٠.,.							
Benton— January February March	 29 28 31	14 5 9				:::			 	1 2 1		2 1			···i	2	1 1 1		1			1 i			3 4
Totals	 88	28												 											
Bollinger— January February March	 32 29 31	9							  i	2				 	i		2					2			3 3
Totals	 92	28												 											
Boone— January February March	 50 40 70	27 27 31						:::		2	1				1 1 3		5		i	1	1 1				10 11 10
- Totals	 160	85												 					7						
Buchanan— January February March	 26 26 13	20		. 1							3	1		 1	-	1 3 2	7				1				3 4 1
Totals	 65	49												 										100	

BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING MARCH 31, 1914—Continued.

and the state of								V 11 -								Y Z				12			- 5			
Pop	Tot	Tot										Im	por	tant	cause	s of c	leath									
oulation, 1910	al births during the	al deaths during the	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tuberculosis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	Other diseases of the nervous system	Diseases of heart and circulatory system	Pneumonia, Broncho- pneumonia	Other diseases of respiratory system	Diarrhœa and Enteritis (under 2 years of age).	A c u t e Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
77,403	137 114 108	103				· · i	2	$\begin{array}{c} 2 \\ 1 \\ \ldots \end{array}$		8 7 9		9 5 11				13 6 6	13 15 16	8 22 20	5 2 4	1		1	1 5 1			2 2 2
1	359	308												ć												
20,624	80 60 78	36	1		6			· i		4 3 6	4 3 2	1 i	i			2 1 1	3 3 2	11 6 12			1 -	3				1 2
	218	138																								
14,605	19	14	1								1					 1 1		3	_		i					
	94	43	١										<u>.</u>													
24,400	37	33					3	3		2 2						2669	55	3 2 1 6			1 1 2 2				<sub>1</sub>	
	115	102																				=				
	77,403 	77,403	77,403	77,403  137  14  15  16  17  18  18  18  18  18  18  18  18  18	77,403  137  114  108  114  108  117  114  103  118  118  108  111  108  118	77,403  137  14  15  15  16  17  18  18  18  18  18  18  18  18  18	77,403 137 114 103 115 114 103 1111 108 111 108 1111 108 1111 108 1111 108 1111 108 1111 108 1111 108 111 108 111 108 111 108 111 108 1111 108 1111 108 1111 108 1111	19	Description   Color   Color	19	## 19	## 1910	December   Color   C	Signature   Sign	Simple   Corebrospinal   Cor	Transport   Teach   Anterior   Poliomy   Continue   C	Discrete   Color   C	## And See Section of the er culatory system.    Comparison of the er culatory system.   Comparison of the er culatory system.	Determine   Cere   Ce	## 19	Transfer   Transfer	Description   Disease   Disease	Description   Description	December   December	Dr.   T.   T.   C.   C.   C.   C.   C.   C	D

Camden— January February March	 20 22 20	7			 	:::				1	1										1		2 2 1
Totals	 62	17			 								 				 		<u> </u>	· · ·		· · ·	
Cape Girardeau  January  February  March	 50 59 49	18			 	9	i			3 3			 	1 3	1				1 i	1	3		3 6 6
Totals	 158	70	1		 								 		<i>:</i>		 						
Carroll— January February March	 39 52 40	8						3		3			 		 1 3	. 3	 1 i		1		2	:::	6 3 3
Totals	 131	54			 								 <u></u>				 		<u> </u>			<u></u>	
Carter— January February March	 13 10 8							 i		2 	1												1 2 2
Totals	 31	26			 								 				 						
Cass— January February March	 37 49 28	9			 					  3	1			3	2	]		l				:::	2 1 2
Totals	 114	37			 								 				 				<u></u>		
Cedar— January February March	 25 36 24	10 15 18			 		:::		2	3		: · · ·		1 2	1 1		  2	.	1 1 1			:::	2 4 7
Totals	 85	43			 						<u></u>		 				 		<u>.  </u>	<u> </u>	<u></u>		
Chariton— January February March	 59 43 49			2	 		 i							2 2 1	4		1		2 3	1 3	3		4 5 3
Totals	 151	71			 		<u></u>				<u></u>	··:	 				 		· · ·	<u> </u>			

QUARTER ENDING MARCH THE (STILLBIRTHS NOT INCLUDED) DURING 31, 1914—Continued MISSOURI AND DEATHS REPORTED IN BIRTHS

401 F007 846 Other causes..... Homicides..... Suicides..... .01 Accidents.... : The puerperal state.... HHM 10 to 4 Acute Nephritis and Bright's Disease..... Diarrhœa and Enteritis (under 2 years of age). SHS Other diseases or respiratory system..... ಬಬಾಬ ಣಾಣಣ 140 Pneumonia, Bronchopneumonia...... 217 210 Diseases of heart and circulatory system.... of death. Other diseases of the nervous system.... Acute Anterior Poliomy-Important causes elitis..... Epidemic Cerebrospinal Meningitis..... Diabetes..... 110 .01 Other forms of Tuberculosis..... 0000 H000 1200 Tuberculosis of the lungs....... Influenza..... Diphtheria and Croup... Whooping Cough..... Scarlet Fever..... Measles.... Smallpox..... Typhoid Fever..... 1110 14 10 15 39 824 30 24 31 Total deaths during the quarter..... 22 12 12 36 33 46 30 39 89 31 39 37 107 Total births during the quarter.... ,305 297 832 12,811 20, 15, 15, Population, 1910..... Counties. Clinton—January... February... January... February. March... January... February. March... Totals. Totals. Clay-January. Totals

Cole— January February March.	 10 17 15	4		 	 	i				 						i	    :::::			  i			1 2 1
Totals	 42	8			 								٠٠.,	 			 						
Jefferson City— JanuaryFebruaryMarch	 25 12 24	22							3 2 2	2	2 1			 4 1	i		 1	1 1 2		1 1 1			4 4 5
Totals	 61	55			 									 			 						
Cooper— JanuaryFebruaryMarch.	 31 20 35		1			···i	: : :	1	4	1	2			 2 2	2	1 7 1	 1						6 4 5
Totals	 86	62			 									 			 						
Crawford  January  February  March	 38 21 36	13			 			1 2	1 2 1		1 2			1 1		3 3 1		2					1 4 4
Totals	 95	36			 									 			 						
Dade— January February March	 26 28 25	8				1		1 2			l							2	1				4 1
Totals	 79	39			 									 			 						
Dallas— January February March	 40 36 22	11 5 6						1	1							1 1 1	 					 i	6 1 2
Totals	 98	22			 									 			 						
Daviess— January February March	 26 42 31	21			 						2			 2 1 2	3	1		<sub>j</sub>		1	 i		2 10 4
Totals	 99	50			 									 			 						
		1	2, 4	1	•		)			1		(				,			-	-	)		

# BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING MARCH 31, 1914—Continued.

				1					, 10			UIII C	<b>u</b> .			190			40.5			1				4.	4 1
5.44.4.2	Pop	Tot	Total quart										In	npor	tant	caus	es of	death	ı.								
Counties.	Population, 1910	Total births during the quarter	al deaths during the	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tubercu- losis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	Other diseases of the nervous system	Diseases of heart and circulatory system	Bronc	Other diseases of respiratory system	Diarrhoea and Enteritis (under 2 years of age).	Acute Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
DeKalb— January February March		18 25 28	12					,	i		2						1 1 3	- 5	4		1 1	 i	i	1			2 4
Totals		71	34										1														
Dent— January February March		50 31 33	15 14 7							. 1	2 1	l 1		1 1			1		4			2 1		1 ``i			1 2 3
Totals		114	36																								
Douglas— January February March		42 35 34	14									1 1 1					1 1			1	i		i		i		6 5 3
Totals		111	30																								
Dunklin— January February March.		115 125 116	34		 2 1		3 4		i		i	4	i					3		3	1 1 1		2	1 2 1	l		33 10 17
Totals		356	144												,												=
			-	-	-	-	-	_	_	_				-	_	-	_	-	-	-	_	-		-	-	-	

Franklin— January February March	 55 38 71		 i				3 <sub>1</sub>	∵i	14 2	 1 1			::::	2 2 3	2 1 6	2		2 4	1	$\frac{2}{1}$	:::	1 1 2	:::		12 8 4
Totals	 164	83		 				<i>.</i>			·		•.	 											
Gasconade January February March	 28 23 27	7	i i	···i	:::		1 i	i i						i	i	1								:::	3 5
Totals	 78	29		 										 											
Gentry— January February March	 23 29 26	8		 						]	1			 2 1 2		9	1					2			3 4 5
Totals	 78	41		 										 											
Greene January February March	 54 47 46	21 25 30			1	 1 1				2	3						7 3			 8	i				5 5 6
Totals	 147	76		 										 											
Springfield— January February March	 57 61 77		i	2 5 16			2 1 1	2		4	2 2		2	3 5	6	3			<sub>i</sub>	]	3 1 3			1	14 10 18
Totals	 195	187		 										 											
Grundy— January February March	 30 49 36	17					i		1 .	31	l 1			 2	2	2	5 3 5		::::						6 3 4
Totals	 115	52		 , .										 											
Harrison— January February March	 45 50 71			 				1 1		2	1	]				2	<b>5</b> 2 5	1				1			7 8 4
Totals	 166	62	<u></u>	 3.6			<u></u>			· / / .				 44									Š		<u></u>

	Pop	Total qua	Tot		0.3								Iı	npo	rtan	cause	es of o	leath						į.			
Counties.	Population, 1910	otal births during the quarter	Total deaths during the quarter	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the	: of		Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	diseases ous syste	Diseases of heart and circulatory system	Pneumonia, Broncho- pneumonia	tory system	der 2 years	Disea	eral state.	Accidents	Suicides	Homicides	Other causes
Henry— January. February. March.		38 56 53	29 23 23					:::			3	i	2  1				4 1 2	7	9999		1	1	1 2	1			6 11 6
Totals		147	75								,																
Hickory— January February March		18 19 18	8 6 6							  i	···i		1 				<sub>i</sub>	1 1	1 i				i 1				4 4 2
Totals		55	20																								
Holt— January February March		23 26 29	12 13 11					1 1		 2		 i	i			 i	$\frac{1}{2}$	5 2 1					2	:::			2 6 2
Totals		78	36						:							٠,,.			,								. 5.57
Howard— January February March.		20 19 27	14 7 30					2	1 		1		1 2				1 3 5	3 1 2	2		i		l l 2	1 1		  2	3 1 5
Totals		66	51																			,					

Howell— January February March	 51 43 53	13 11 20			2	 i			1 1			 				<sub>i</sub>	$\begin{vmatrix} 2\\1\\2 \end{vmatrix}$	$\begin{bmatrix} 2\\2\\4 \end{bmatrix}$			···i		i			1 4 7
Totals	 147	44																								
Iron— January February March.	 16 26 17	8 8 13			:::		 2									1 1 1				····			1 i			2 2 7
Totals	 59	29									d															
Jackson— January February March.	 62 65 71	48 37 45					 i	1 2 1		4		 3 4	1 	1		4 3 5	5 2 8	4 9 5		1	4 3 2					11 11 9
Totals	 198	130																								
Kansas City— January February March	 429 424 392	369 302 361	2	i		2	3 5 3	9		35 28 27	5	17	3	3 1 3		13 11 10	44	51	11	5	30	6	11	10		47
Totals	 1,245	1,032																								
Jasper— January February March	 73 57 85	37 42 54					1	3	1	11 7 11	1				::::	3 2 4	5 6 7	3 3 6	3		2 1 3	···i				6 15 9
Totals	 215	133				-1																				
Joplin— January February March	 40 70 52	46 54 72	_ 2		1 1 12					8		3	1			4 7 6	5 10 5	5	<u>i</u>		3		5 3 2	1 1 1	2	10 8 14
Totals	 162	172														, .							· ;			
Webb City— January February March.	 15 30 38	21		1				1		9						2 2 1		1 2 1	i		2		···i			3 3 2
Totals	 83	52															<u></u>									

	Pol	Tot	Tot		1								Ir	npoi	rtant	cause	es of	death									
Counties.	Population, 1910	Total births during the quarter	Total deaths during the quarter	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tubercu- losis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	Other diseases of the nervous system	Diseases of heart and circulatory system	Pneumonia, Broncho- pneumonia	Other diseases or respiratory system	Diarrhœa and Enteritis (under 2 years of age).	A c u t e Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
Jefferson— January February March		56 64 71	29 22 26	1		4 1			i	2	2 1 5		 1 1	1 1			$\begin{bmatrix} 2 \\ \cdots \\ 4 \end{bmatrix}$	$\frac{2}{1}$	7 4 2		1 2	1 i	· · i	2 1			8
Totals		191	77																								
Johnson— January February March		58 34 48	21						2	∵i	24 4 2		1 3 1				3	2	3 3 3		i	<sub>i</sub>		1 	 i		4 8
Totals		140	63														. , . ,										
Knox— January February March		22 21 15	7 11 11							i	3						2	 2 2	$\frac{1}{2}$			3		:::		7.	1 5 3
Totals		58	29																								
Laclede— January February March	17,363	30 33 19	13 24 15						1 1	1	2	1 1		1			2 2 2 1	 4 3	35	2	i	 1 2		1	:::		395
Totals		82	52	`													, · · ·										

Lafayette— January February March	 55 54 62	40	1					1			3	5		   	1 8 1		4	3	3	1	1 1 1		2 1 1	···i		13 10 5
Totals	 171	98												 								<u>.</u>				
Lawrence January February March	 75 59 49	22		2	2					:	3			 	1 3 2	3 4 1	1		 2 1		2 .	i	1 .			3 5 4
Totals	 183	75												 												
Lewis— January February March	 25 38 19	9 7 11	j					···i	:::		2 1			 	i		3	3			2 . 1 .			1 1	0	1 1 3
Totals	 82	27												 												
Lincoln— January February March	 23 28 31	15							···i			1		 		 2 4	1		·			1.	1 .			4 6 3
Totals	 82	49										. 1		 												
Linn— January February March	 61 36 63	20 20 31			3		 i		:::		3	1 2 2		 ::::	 2 4	5 4 3	2		2 i		1 . 3 . 1 .		1 :			7 4 6
Totals	 160	71												 												
Livingston— January February March	 43 33 33	27 26 33							···i	2	3			 	2 3 4	5	9		1		1 . 2 . 1 .		2 .			6 3 9
Totals	 109	86							\					 				.7.								
McDonald— January February March	 7 9 11	5 3 3	i		:::			1 					:::				 2 1				1 . i .					1 i
Totals	 27	11												 												
				1	-	,	1	1			-	1				1	1	1		-				-		

(STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING MARCH 31, 1914—Continued. BIRTHS AND DEATHS REPORTED IN MISSOURI

900 Other causes..... Homicides.... Suicides.... .01 Accidents..... ---The puerperal state.... HHM S A c u t e Nephritis and Bright's Disease..... Diarrhœa and Enteritis (under 2 years of age). Other diseases of respiratory system..... Pneumonia, Broncho-pneumonia...... Important causes of death. 200 Diseases of heart and circulatory system.... HHO .00 Other diseases of the nervous system.... Acute Anterior Poliomyelitis..... Epidemic Cerebrospinal Meningitis..... Diabetes..... 400 .01 Cancer..... Other forms of Tuberculosis..... Tuberculosis of lungs..... .01 Influenza..... Diphtheria and Croup... Whooping Cough..... : : Scarlet Fever..... : : Measles..... : Smallpox..... Typhoid Fever..... 13 10 co co 974 30 Total deaths during the quarter..... 1828 16 17 26 28 24 15 49 61 50 09 64 59 29 Total births during the quarter..... 11,273 12,231 Population, 1910..... Counties. January.... February.... March.... January... February... March.... Marion— January... February. March... Martes— January... February. March... Totals. Totals. Totals Totals

Hannibal— January February March		18 34 36	$\frac{22}{20}$ $\frac{21}{21}$	1	 				1	 	2 2 2 3	2 j	1 1 1			 313	2	2		1 i		4 . 3 .	i		 2		5 7 5
Totals		88	63													 	·										
Mercer— January February March.		26 27 22	7					.13			1	L				 : <sub>i</sub>	1 1	. 2	2								1 3 
Totals		75	19		·											 											
Miller— January February March		30 48 30							1	···i	2	2	1.	 i		 2	 1 2	1			i	1 . 1 2 .			:::	:::	2 5 2
Totals		108	33					· .								 											
<b>Mississippi</b> January February March		27 30 34	25			4		···i			3	3 	1	1	i		1	3		2 1		2 .					3 6 3
Totals		91	51				· · ·									 											
Moniteau— January February March	14,375	17 29 24	11 6 16	2					:::		1	2		:::		 1 1 1		1		i		1		···i		:::	$\frac{3}{1}$
Totals		70	33													 									• • •		
Monroe January February March		19 27 33	15	::::							2 3 1				::::	3	2 1	1 3	3				 i	· · · i			2 4 
Totals		79	38													 											
Montgomery— January February March		20 20 23	10 15 18	2					 2		2		2			1 3 2	3 1 2	1		4		3.		i i			 5 2
Totals		63	43													 											
							1		1	1		1	1	1		,		1	,		,	-	,	,			

4101 984 2000 Other causes..... • Homicides.... Suicides..... · 00 H :თ Accidents.... The puerperal state.... 10 NOT Acute Nephritis and Bright's Disease..... .01 Diarrhœa and Enteritis (under 2 years of age). 3 Other diseases or respiratory system..... . 10 133 82450 91010 Pneumonia, Bronchopneumonia..... Important causes of death. 100 Hene Diseases of heart and circulatory system.... 119 -21 : Other diseases of the nervous system..... ----Acute Anterior Poliomyelitis..... Epidemic Cerebrospinal Meningitis..... : ::: Diabetes..... : : : SOL Cancer..... 31, 1914—Continued. : Other forms of Tuberculosis..... 30 · H 00 212 Tuberculosis of the 3 Influenza..... Diphtheria and Croup... :01 : :01 Whooping Cough..... : : Scarlet Fever..... :H0 : : Measles.... :: Smallpox..... Typhoid Fever..... 15 16 129 50 69 24 28 Total deaths during the quarter..... 63 52 45 40 46 162 55 55 57 20 19 22 80 61 31 Total births during the quarter..... 19,488 27,136 28,833 12,863 ....... Population, 1910..... January..... February..... March.... January.... February.... March.... Newton—January..... February..... Counties. Nodaway—
January...
February...
March.... Totals. New Madrid Totals.. Totals. Totals

BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING MARCH

Oregon— January. February. March		38 29 21	8 18 10						 4 1							2 2	$\begin{bmatrix} \dots \\ \frac{1}{2} \end{bmatrix}$	1				i  ∷:	i		:::	2 5 1
Totals		88		 _								-											-			
Osage January February March		36 38 29	12 10 16	 				 i 1	i	3	 i	1					1 1 2	2		1						4 3 2
Totals		103	38	 		,																				
Ozark— January February March		27 25 31	3 5 8	 								···i				1		 1 2				. 1 i				1 2 2
Totals	1	83	16	 																						
Pemiscot— January February March		69 54 71	26 24 33						 1 1	2 3	3 ]	. 1				i		2000	3	. 1		i	i			14 9 10
Totals		194	83	 		. : .																				
Perry— January February March		35 39 34	15						2		2	1				1	i			1 1		1				2 1 8
Totals		108	47	 																						
Pettis— January February March		24 19 31	6	 1					1		l i		1					1 5	1			$egin{array}{c} 1 & \dots \\ 2 & \dots \\ 2 & \dots \end{array}$	. 1			2 1 1
Totals		74	25	 																						
Sedalia— January February March		38 34 39	28 23 29							1						. 4	1		5	i		6			.,-	5 8 6
Totals		111	80	 																						
			-	-(	-)		-	-	-	-		-	-	1	-		-	'-	-	-	-		-	-)	-	

BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING MARCH 31, 1914—Continued.

	Counties.	Phelps— January. February. March.	Totals	January February March	Totals	Platte— January February March	Totals	Polk— January February March	Ţotals
Pop	ulation, 1910	15,796		22,556		14,429	* 1	21,561	
Tot	al births during the	32 41 29	75	44 40 40	106	40 115 32	87	37 50 37	124
Tot	al deaths during the	10 16 22	48	23	. 99	22 22 20	62	14 23 18	55
	Typhoid Fever	Ŋ.:: <b>-</b>	:		:	П::		1	
	Smallpox		-						:
	Measles			::::	:			::0	:
	Scarlet Fever	:::			:				:
	Whooping Cough	- : : :		T ::		:::			
	Diphtheria and Croup	111							:
	lungs	- : : :	:		:	: :	:		:
	losis  Tuberculosis of the		<u>:</u>   :	1 1 2 2 1		H : C		H&H	
	Other forms of Tubercu-		:	<b>H</b> ::	:	::=	:	· : -	:
Imp	Cancer	: <del>- : :</del>		::=	:	:H:	:	12:	:
orta	Diabetes	:::	:	; = Q.	i	:::		: ::	:
Important causes of death.	elitis  Epidemic Cerebrospinal Meningitis								
ses of	Other diseases of the nervous system	7 1			:			1 :::	:
death	Diseases of heart and circulatory system	4		1337	:	1 422		241	6
	Pneumonia, Broncho- pneumonia	7049	:	4-1-	:	991		4601	:
	Other diseases of respiratory system	::07		2 :1		::01			
	Diarrhœa and Enteritis (under 2 years of age).	:: =				; <del>-</del> :	i	::-	:
	Acute Nephritis and Bright's Disease	21 :		21-12		601		::"	
	The puerperal state	. ::::				- : :		.23	:
	Accidents	: : :	:	T :	:	::"		: 1	:
	Suicides	-:::		.03 :			:		:
	Homicides	111		:::	:				:
	Other causes	:04		1000	:	4709	:	449	:

Pulaski— January February March		29 29 30									2 2					::::		1	3 4		2.6						2 5 4
Totals		88	27						<i>.</i>													<i></i>					
Putnam— JanuaryFebruary March		29 32 27	15 7 11							:::		i			3			5 i	1				:::				4 3 3
Totals		88	33					į																			
Ralls— JanuaryFebruary March		13 27 10	9 9 7								1							1 3	5				:::				2 3 1
Totals		50	25						,																		
Randolph— January February March		33 29 34	37 19 26	1 ::::				1 1 1		1 1	4						5 2 1	5 2 3					 1 1	1 1 1			11 6 4
Totals		96	82																								
Moberly— January February March		10 19 16	22 11 15	1 								3	1				3 1 1		3			<u>.</u>				 i	1 3 3
Totals		45	48																								
Ray— January February March		44 35 43	23 21 25			1	:::		2				1	:::			3	2 4 5	7	 1 2	1	1		1			6 4 9
Totals		122	69				٧.,																				
Reynolds— January February March		20 22 31	11 8	12.11					1			<sub>i</sub>								1		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		 2	:::		4 1
Totals		73	25																								
	- 1,- 1111		150 150 150		1	1	1		1		1	,	,	1			,			,			,	,		1	7

	Pop	Tot:	Tot:										Imp	orta	nt ca	uses	of de	ath.									
Counties.	Population, 1910	Total births during the quarter	Total death's during the quarter	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tubercu- losis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	Other diseases of the nervous system	Diseases of heart and circulatory system	Pneumonia, Broncho- pneumonia	Other diseases of respiratory system	Diarrhosa and Enteritis (under 2 years of age).	A c u t e Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
Ripley— January February March		24 29 22	16 11 16			1			 3 1	 i	3						1 1		4 3 3	i			41	 i		····i	2 3 1
Totals		75	43															. 9									
St. Charles— January February March		34 34 51	24 15 24						1 1	1 1	 2 1		1	<sub>i</sub>		ź	3 2 2 2	4 3 3	2	1 1 4		<sub>2</sub>	1	2			4 1 5
Totals		119	63																								
St. Clair— January February March		42 31 35	11 16 12		:::					:::	3	2	1		::::		1 1	2 1 3	1 1 5			1 1 1	 i	:::			5 4 2
Totals		108	39																								
St. Francois— January February March		98 99 90	51	···i		3		4 2 4	$\frac{1}{2}$	-	5 11 2	1	2 3 1				1 2 2 2	7	12 5 7	1 4	1	2		1 4 2			4 7 7
Totals		287	125	7.7																1.	1.00						

Ste. Genevieve— January February March	 22 22 15									 2 1		···i				$\begin{bmatrix} \dots \\ 2 \\ 3 \end{bmatrix}$	2 i	2 1			i		 2	 i		3 8 3
Totals	 59	38																								
St. Louis— January February March	 123 108 111	109 131 113	 2		 1 2	1 1 2		1 1	<sub>2</sub>	35 60 40		3				6 6 7	8	10	6	2	7 4 4	1	3 5 1	1	···i	20 20 13
Totals	 342	353																								
Saline— January February March	 49 72 47	21 34 37	2			:::	 2 3		 1 2	1 3 1	1	2		::::		2 4 4	i	3			i	<u>2</u>	2 2 	 i	 	7 9 6
Totals	 168	92																								
Schuyler— January February March	 18 18 23	9 6 7								1				· · · · ·		i	2						:::			1 3 2
Totals	 59	22																				,				
Scotland— January February March	 $ \begin{array}{c}     22 \\     16 \\     29 \end{array} $	13							 i	1		1	:::		::::	2 1	2 1 1	2			1 1	i				4 5 1
Totals	 67	28																								
Scott— January February March	 73 56 57	32			3				:::	22 22 22	1		:::			3 1 3	5 2	6 6	j	1			1 1 1			4 8 5
Totals	 186	86																								.4.4
Shannon— January February March	 31 37 42		 j					 1	i											i	]			:::		2 5 2
Totals	 110	24								<u>C.</u> .										2						
				,	'		,		,					1	'	,		'		'	1			'	1	

	Pop	Tot	Total quar	1									1	mpe	ortan	t cau	ses of	deat	th.								
Counties.	Population, 1910	Total births during the quarter	al deaths during the	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tubercu- losis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	Other diseases of the nervous system	Diseases of heart and circulatory system	Pneumonia, Broncho- pneumonia	Other diseases or respiratory system	i F	Acute Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
Shelby— January February March		23 23 29		2 = 1	1				i	 1	$\begin{bmatrix} & & & \\ & \ddots & & \\ & 2 & 2 \end{bmatrix}$	i					1 i	1 2	2			$\begin{bmatrix} 2 \\ \cdots \\ i \end{bmatrix}$	:::				4 3 5
Totals	,	75	39						·																		
Stoddard January February March		87 88 77	25 27 38			3 4 5		1 2	 i		<sub>2</sub> 5		1 1 1	1			1 1 2	3 	5	, 1	2	$egin{array}{c} \dots \ 1 \ 2 \end{array}$	1 	 2 1			3 10 9
Totals		252	90																						;		
Stone— January February March		39 24 35	6 10 9				5	1		1 	1 1	···i	···i				 1 1	i	2 1 2		i	···i					1 2 5
Totals		98	25	÷		÷																					
Sullivan— January February March	18,598	38 35 34	20 21 15						1 1		1 2 5		1				 2 3	2 1	4 6 1	1 1		1 1	1 1	1		1	6 5 4
Totals		107	56																								

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Taney— January February March		24 20 28	6 6 8					,					 2	 	  1 1	$\begin{bmatrix} 2 \\ 1 \\ \dots \end{bmatrix}$	 i				  :::	:::		3 2 1
Totals		72	20											 ?:	 					 				
Texas— January February March		62 49 49	21 9 22	1	:::				1	· 1	2				 2 1	$\frac{3}{2}$				 				9 4 7
Totals		160	52											 	 					 				
Vernon— January February March		33 56 53	27 25 28		:::		3		2		2 1 2		1 1 6	 	 6 3 3	5	8	 2		 2				5 4 3
Totals		142	80											 	 					 				
Warren— January February March		12 23 11	11					 							2	1 3 2		· · · · i			. 1	1		3 4 1
Totals		46	29											 <b>N.</b>	 					 				
Washington— January February March		31 18 23	11											 i	 1	···i	3 2 5		2 1	 				7 <u>.</u> 5
Totals		72	39											 	 ,					 				
Wayne— January February March		37 41 54								``i	2 3 2	1	1 1				3 1 3	1	l		1			2 7 2
Totals		132	43											 	 									
Webster— January February March	17,377	61 48 44	13 17 15			, i					2	2				1	4		1	 1	1 i		i	3 4 2
Totals		153	45											 	 					 				

	A COLUMN		y A				- 1		,												7 1						
	Pop	Tot	Total quar										In	npoi	tant	caus	es of	deatl	h.								
Counties.	Population, 1910	Total births during the quarter	al deaths during the	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tubercu- losis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	Other diseases of the nervous system	Diseases of heart and circulatory system	Pneumonia, Broncho- pneumonia	Other diseases of respiratory system	Diarrhœa and Enteritis (under 2 years of age).	A c u t e Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
Worth— January February March		10 9 18	5					:::	···i		ii						<sub>i</sub>	 <sub>2</sub>	 1 1			i			1		3 1 3
Totals		37	17																								
Wright— January February March		39 41 31	18						<u>.</u>	··· i	1 5		:::	1 			 i	: i	5 1 7			 2 1		2 1			7 5 5
Totals		111	53																							. ; ;	
St. Louis city— January February March	687,029	1,329 1,242 1,320	915	8 4 5	:::	7 5 14	9	6	19		83 83 135	14 13 15	72 53 60	8 9 17	 i	2 :	55 51 56	153	144	35	12	98 82 114	9 11 8	34	26 17 20	10	159
Totals		3,891	3,145																	4							
Totals for State  January  February  March		6,395 6,216 6,432	3,673 3,461 4,108	35	 3 1	40 45 117	11	36	55	33 43 59	362 402 448	60	181 165 192	27	5	$\frac{4}{3}$	236 226 264	409	560	102	33	274 222 279	46	139 121 165	46	16	793
Grand totals		19,043	11,242	121	4	202	67	120	192	135	1212	157	538	107	18	7	726	1346	1797	386	134	775	130	425	151	55	2437

## ADVANCE SUMMARY.

Showing Comparison of Important Causes of Deaths and Number of Births
Registered in the State During 1913.

For the information of those who did not receive a copy of the thirty-first annual report of the State Board of Health for the year 1913, we give the following advance summary of deaths and births registered with the central bureau. While this report is not altogether correct it permits of an interesting comparison with the statistical reports of 1911 and 1912.

For the year 1913 there were reported to the Central Bureau a total of 74,643 births and 42,056 deaths. The month of September showed the highest number of births, 6,764, and June the lowest number, 5,322. The monthly average for the year was 6,220. The births exceeded the deaths by 32,587.

The month of January showed the highest death roll, 4,129, and March second, with 4,098. The month showing the lowest death rate was June, with a total of 3,057. The monthly average of the deaths was 3,504.

In 1912 there were 75,452 births, or 809 more than in 1913. The birth rate for the State in 1912 was 22.91 per 1,000 population and 22.66 for 1913.

There were 42,139 deaths in 1912, a death rate of 12.7 per 1,000 population, while the death rate for 1913 was reduced to 12.77 per 1,000 population.

The following table gives a comparison of the births and deaths for 1913, by months:

BIRTHS AND DEATHS BY MONTHS OCCURRING IN 1913 (STILLBIRTHS EXCLUDED).

Month.	Births.	Deaths.
January	6,371	4,129
February	5,972	3,966
March	6,480	4,098
April	6.073	3,503
May	5.626	3,199
June	5.322	3,057
July	5.989	3,391
August	6.720	3,586
September	6.764	3,208
October	6,494	3,333
November	6,249	3.177
December	6,583	3,409
Totals.	74.643	42,056

## Deaths During 1913 from Twenty-four Important Causes.

The accompanying table shows the number of deaths occurring in the State during the year 1913 from the twenty-four principal causes.

It will be noted that diseases of the heart and circulatory system was the leading cause of death, with a total of 5,069. Following closely upon this come tubeculosis in its various forms, and pneumonia, with totals of 4,734 and 3,939, respectively.

Stillbirths were not included in this list, and are not counted either as births or deaths. There were 3,749 stillbirths reported to this office in 1913.

## ADVANCE TABLE SHOWING DEATHS IN 1913, BY MONTHS, FROM TWENTY-FOUR PRINCIPAL CAUSES OF DEATH (STILLBIRTHS EXCLUDED.)

				-		1 4	L	1 - 6	1 70	1 -		1	T NOW THE PARTY OF
Cause of death.	January	February	March	April	May	June	July	August	September	October	November	December	Total
Typhoid Fever Smallpox Measles Scarlet Fever Whooping Cough Diphtheria and Croup Influenza Tuberculosis of the Lungs Other forms of Tuberculosis Cancer Diabetes Epidemic Cerebrospinal Meningitis Acute Anterior Poliomyelitis. Other diseases of the Nervous System Diseases of Heart and Circulatory System Pneumonia. Broncho-pneumonia. Other diseases of Respiratory System Diarrhœa and Enteritis (under 2 years of age) Acute Nephritis and Bright's Disease The Puerperal State Accidents Suicides Homicides Other causes	99 4099 555 1855 488 222 1 2055 4771 7777 1444 488 263 65 208 38 20 889	33 2 43 43 109 384 46 61 65 41 32 24 468 718 138 59 160 45 160 45 165	913 488 400 788 421 77 181 132 7 243 490 725 149 48 275 47 153 35 24 870	344 22 1122 199 27 28 599 381 466 40 27 467 404 106 106 106 106 106 107 229 966 164 66 24 759	366 2278 244 244 255 544 185 39 188  188 443 243 600 67 223 40 149 45 222 838		211 100 441 144 66 295 555 164 36 10 13 165 359 75 66 380 222 42 216 42 33 1,050	1 9 3 45 18 44 292 499 193 38 5 181 411 577 588 2099 37 246 445 25 1,151	1 5 1 22 39 3 297 35 5 5 5 205 338 85 36 262 217 37 181 58 26 210 20 20 20 20 20 20 20 20 20 20 20 20 20	5 723 1011 2 305 455 2111 40 2 5 1911 424 165 78 214 236 366 142 49 49 916	100 155 800 123 155 466 179 39 1 1 2177 370 272 655 119 195 444 157 47 47 47	24 144 22 85 23 331 533 221 32 24 15 176 444 287 85 62 211 141 50 40 951	83 46 14 36 58 41 4,14 61 2,19 43 18 55 2,37 5,06 3,93 1,03 1,03 57 3,30 11,06 0
Totals	4,129	3,966	4,098	3,503	3,199	3,057	3,391	3,586	3,208	3,333	3,177	3,409	42,05

## **MISSOURI**

# STATE BOARD OF HEALTH



## QUARTERLY BULLETIN

#### **NEW SERIES**

VOL. 4.

APRIL-JUNE, 1914.

No. 2.

#### MEMBERS OF THE BOARD

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J. A. B. Adcock, M. D., Sec'y Jefferson City	M. R. Hughes Met. I	Bldg., St. Louis
T. H. Wilcoxen, M.	D., Bowling Green.	

Dr. George H. Jones, State Bacteriologist, Jefferson City. C. J. Kaiser, Statistician, Jefferson City.

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Registration of Physicians       3-         Extract from Minutes of July Meeting       6-1         Examinations       1         The Plague       12-1         The Autobiography of a Fly       16-1         Hound Dog Fly (Poem)       1         Our Parents (Poem)       18-1         Report of State Bacteriologist       2         Preparation of Specimens for sending to the Laboratory       20-2         Pominders       22-2	Births
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Vital Statistics Summary	5   1914

**Published at Jefferson City** 

CHARLES THE RESIDENT

Entered as second-class matter

## BULLETIN OF THE

# Missouri State Board of Health

NEW SERIES.

VOL. 4.

APRIL-JUNE, 1914.

NO. 2.

### REGISTRATION OF PHYSICIANS.

The first registration law in this State was enacted in 1874 and approved by the Governor. Under this act all physicians were required to register their diplomas with the county clerk of the county in which they were living; and all those persons who were practicing medicine, but were not graduates of any medical college, were allowed to register their names as physicians and surgeons with the county clerk, which gave them the privilege of treating the sick and afflicted without any other preparation.

This law was amended in 1877, permitting the county clerk to register only such physicians as were graduates of legally chartered medical colleges upon presentation of diploma. This law was in force until July, 1883. There was nothing worthy of note accomplished by this law. There was a great increase in the number of medical colleges, many of them mere "diploma mills," and as the county clerks throughout the State did not know a good school from a bad one, or in many cases a good diploma from a bogus one, it is no wonder that they were sometimes deceived and very incompetent men were placed upon the county roll of physicians and surgeons. Even among reputable medical colleges the standard was low at this time. Ten years' practice and reading medicine with a preceptor followed by one term of twenty weeks in a medical college entitled the doctor to a diploma. The reputable schools were all of two term requirements, yet in many of them a credit of one term was given for evidence of ten years' reputable practice. was the custom to practice under a preceptor, yet students and preceptors were often practicing one or two hundred miles apart.

Therefore, in order to raise the standard of medical education and maintain the honor and dignity of the medical profession that the sick and the afflicted might have better care and protection from disease, an act was passed by the Legislature and approved by the Governor in 1883, creating a State Board of Health, and giving this Board general supervision over the registration of physicians and surgeons in the State.

All who could furnish satisfactory evidence of having received a diploma from a legally chartered medical college in good standing, of whatever school or system of medicine, should receive a cerficate to practice medicine upon making application and paying the fee for same. The penalty for violating this act was a fine or imprisonment in the county jail, or both such fine and imprisonment. This law was not applicable to those who had been practicing in this State for five years prior to this act. The Board of Health could refuse certificates to those who were guilty of unprofessional or dishonorable conduct and could also revoke certificates for like causes. On July 13, 1883, the first State Board of Health met in Jefferson City and organized. Dr. E. H. Gregory of St. Louis was elected President and Dr. J. C. Hearne of Hannibal was elected Secretary.

The work was taken up in earnest. The rush for registration of doctors' diplomas from every part of the State came pouring in so fast that to ascertain and reject those from fraudulent schools, and to deal justly with those of doubtful character, was no small job.

But co-operating with similar boards in sister states and conferring with the best medical colleges in the United States, the educational standard was raised from the minimum requirements of one year, with ten years' practice, in 1883, to two full years' minimum requirements in 1890; and a further raise to a three years' graded course minimum requirements in 1894. This demand for a higher standard of medical education was bringing forth fruits nearer in keeping with the progress of the age than ever before. Then in order to push the good work on the Board ruled that no medical college would be considered in good standing with minimum requirements of less than four years' attendance before graduation after 1900. Nearly all the medical schools would readily adopt the rules of the State Board of Health, but some of them were very reluctant about carrying the rules out. Of course, the results were, as might have been expected, many diplomas were

presented for registration which were obtained by some short-cut method, but could not be rejected without sufficient data. This, of course, the Board could not always get, and many of them were consequently registered, the same as those who had honestly filled all the requirements and were in every way worthy.

Then to put everyone who might want to begin the practice of medicine in this State upon equal requirements before entering into such practice a medical practice act was passed by both branches of the Legislature and approved by the Governor March 12, 1901, requiring everyone not at this time a registered physician within the meaning of the law to appear before the State Board of Health at such time and place as the Board may designate and be examined as to their fitness to engage in such practice. This act eliminated the diploma proposition and was intended to put it up to the real merits of the applicant, as might be ascertained by the Board.

The law was in force for two years. In 1903 the Legislature amended this act by permitting all graduates of a Missouri medical college, who had matriculated in a medical school prior to March 12, 1901, to register their diplomas with the State Board of Health, and thereby secure a license without examination after getting the diploma from a Missouri medical college. This was pretty rank, too much so to keep, so it was repealed in 1907.

The practice act was again amended in 1905. This amended act provided that the State Board of Health may, at their discretion, admit, without examination, legally qualified practitioners of medicine in any state, territory, or in the District of Columbia, with equal requirements to that of the State of Missouri and that extend like privileges to legally qualified practitioners of this State.

The laws in many of the states are such that no form of reciprocity can be established, but reciprocity, on the basis of examination only, exists between Missouri and the following named states: Illinois, Louisiana, North Dakota, South Carolina, Texas and Virginia; while reciprocity, on the basis of diploma or examination, exists between Missouri and the following named states: Colorado, District of Columbia, Georgia, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Michigan, Minnesota, Nebraska, Nevada, New Hampshire, Ohio, Utah, Vermont, West Virginia and Wisconsin.

The practice act was again amended in 1907. This act requires a preliminary qualification; that is, a diploma from a university, academy, college, normal school, high school, or a certificate from a county school commissioner certifying that they have passed an examination and possess qualifications equal to those of a graduate of an accredited high school. They must also furnish satisfactory evidence of having graduated from a reputable medical college of four years' requirements, provided the time of graduation has been since March 12, 1901; and two years' requirements if prior to March 12, 1901. They must also furnish evidence of having good moral character.

These qualifications must be attained before the applicant can take the examination given by the State Board of Health for license, which examination is conducted in fourteen different subjects, namely: Anatomy, chemistry, physiology, therapeutics, obstetrics, gynecology, surgery, practice of medicine, bacteriology, medical jurisprudence, hygiene, ophthalmology, pathology and pediatrics; and the applicants are required to answer seventy-five per cent of such questions as are asked them before being granted a certificate.

This is the law at present and has been in force since June, 1907. It is readily seen that the licensing power of the Board has undergone many changes to satisfy certain conditions in the onward march to higher medical education.

#### EXTRACT FROM MINUTES OF JULY MEETING.

It was decided to give oral examination to Drs. A. E. Everett, L. J. Pierce and F. G. Bond. The result of these examinations was that all three passed the Board.

Then those who took the examination in St. Louis, Mo., June 15, 16, 17, 1914, were passed upon and resulted in the following named doctors passing the Board:

Abbott, Frederick Book
Ball, James Moores
Beard, Frank George
Bell, Hubert O.
Bond, Franco Gales
Boogher, Jesse Leland
Bosserman, David C.
Bradley, Wm. Chas.
Bredeck, Joseph Francis
Bremser, Harry Lewis
Brown, Harry Eugene
Carroll, Percy James

Causey, Frederick Archibald Chenowith, John Albert Conrad, Harry Samuel Cooper, Thos. Egner Courshon, Alexander Julius Denton, Wright Harvel Dorgan, Clarence Martin Dorsheimer, George Valentine Everett, Alfred Edward Fansler, Walter A. Foster, Howard Marion Furr, James Edward

Gausepohl, Lawrence Edward Gesell, Robert Albert Gilbert, Alan Arthur Glenn, Joseph Earl Goodrich, Harold Anott Green, Philip Palmer Gummig, Edward August Haas, Ferdinand Franklin Hardesty, John Frank Hayes, John Maurice Hein, Emil Edgar Heiple, Edward Eli Henson, Lafayette Leonard Hindman, William Marcy Howard, Pink Howe Huse, Grace Hopkins, Thos. Andrews Iterman, George Edward Jackson, Fred Douglos Jackson, John Dee Jones, Vincent Leo Kampf, Frederick Henry Ketttelkamp, George David Kistner, Paul Frederick Lewis, Thomas Arthur Loescher, Walter Otto Lonsway, Maurice Julius McCall, Tecumseh D. S. McConnell, Wm. John McGennis, Patrick McKenney, James Allen McKittrick, Ora Francis McLarney, John Thomas Mackey, Dudley Earl Maher, Paul Patrick Malone, Samuel Martin Mattes, Charles Lewis Maxwell, Herbert Spencer Mayes, Corwin Spencer Meadows, Dorcas F. M. Meluney, Solomon Eugene Miller, Eugene A.

Moody, Ellsworth Eurit Muren, Arthru Lawrence Mustard, Harry James O'Brien, Wm. Austin O'Connell, John O'Connor, Thos. Augustine Osnes, Elias Nilson Pelican, Clyde Loren Pierce, Lincoln Jay Pinkerton, Harry Elmer Rabenau, Wm. Jacob Rice, Dell Frank Robinson, John Alexander Roundy, Collis Ignomar Salisbury, Wm. James Sampson, David Gentner Schaie, Milton Sherwin, Charles Frederick Shrout, Cecil B. Silvermann, Dora Jennie Smith, David English Snider, Samuel Harrison Stewart, Joseph Edgar Thomsen, Thomas Frederick Tierney, John Leo Towey, John William Tucker, Wm. Joseph Turner, Rush Tyree, James Israel Vezean, Stephen Waldman, Joseph Sterling Wallace, Hilen Ketcham Weedman, Walter Franklin Welch, Alan Richard Wessling, Alfred Louis Wessling, Frederick John Wilson, George Wade Wilson, George Wheeler Wilson, Harry Hall Wilson, John Michael Woodbury, Malcolm Sumner And the names of those who failed are as follows:

Alexander, Wm. Cobb Bassman, Abraham Bonhasin, Abraham Blass, Rosa Barnard Cook, Frederick Marshall Elliott, Mary Hughes Glasscock, James Alford Hammler, Christiana Victoria Kleissle, W. Benton Leitch, George Wesley

Miller, George Arthur Mohr, Charles Albert Owens, Roy Jefferson Posnausky, Mont Max Ralls, Loren Birtsell Simpson, James Augustus Smith, Ella Carmain Smith, Samuel Thomas Stubblefield, James Preston Toalson, Ellington

The number of midwives taking the examination was twelve, of whom eight failed, and four passed, whose names are as follows:

Flinn, Minnie, Mrs. Holub, Carrie P., Mrs.

Long, Albert Anderson

Kantmann, Marie, Mrs. Moorman, Theresa May, Mrs.

The Board then approved of the following named doctors' applications for reciprocal relations with Missouri:

Avery, Samuel D	California
Bogard, Edward	Kentucky
Bondurant, Flint	Illinois
Brakebill, Martin Luther	Kansas
Brown, T. H	Nebraska
Caddick, Earl	
Davis, W. T	
Dickinson, Amelia A	
Granan, Geo. H	
Hultner, Alfred	
Lorie, Alvin	
McGill, Earl Duane	
Major, Ralph H	
Marxer, Barney J	
Peden, S. E	
Robinson, G. Canby	
Rogers, N. L. R.	
Sullivan, Jas. A	
Thomas, Marcus H	
It was moved and rested that Missouri enter into	

It was moved and voted that Missouri enter into reciprocal relations with California. That is, that Missouri will accept for reciprocal license doctors from California who have been licensed by examination and possess qualifications equal to licentiates of Missouri.

The Board also moved and voted to enter into reciprocal relations with Mississippi upon the basis of examination. That is, all physicians who registered in Mississippi with requirements equal to the requirements in Missouri at the time of registration in Mississippi, Missouri would extend them reciprocal relationship, provided that Mississippi will extend the same courtesy to Missouri licentiates.

These reciprocal relations have been agreed to and are now in operation.

Dr. R. L. Wills made the following report of his trip to Monett, Mo.:

To the President and Members of the Missouri State Board of Health:

At the instance of Dr. Adcock, our Secretary, I went to Monett, Mo., on the 29th of June, 1914, to advise with the citizens in reference to an epidemic of typhoid fever which was and is still prevailing in that city.

I found a contaminated water supply and advised them to seek a different source of water. They seemed anxious to do so and are now endeavoring to remedy the condition.

Respectfully,

R. L. WILLS.

Upon advice of Dr. Wills, Monett immediately took up the question of a pure water supply and has voted bonds for deep wells, which will be put in immediately.

Those who were licensed to practice medicine and surgery in Missouri in 1914 prior to the June examination were as follows:

Airis, Lavernia
Baerens, Oscar Frank
Bellamy, John Austin
Berry, Wm. D.
Blair, Vilray Papin
Boutros, Amin
Cerny, George
Dalton, Henry
Davis, Elmer Thomas
Doane, Frank K.
Ferguson, Roy Harrison
French, U. S.
Hamlin, Mont. M.
Jones, George H.
Lee, Charles Carter

Levy, Moise Dreyfus

LeSaulnier, Edward Baumhoff Johnston, Meredith Rutherford Jolley, James Frank Krapf, Geo. E. Lamphear, Emery McGuire, Clarence Archibald McIntire, John Current McReynolds, Ralph Movius, Herbert John Newcomb, C. A. Odeneal, Thomas Helm Olmstead, Wm. H. Padberg, Louis Rudolph Parrish, Clarence Hardin Post, Wm. L. Priessman, Frank Albert

Rosebrough, Frank Henry Scherer, Phil Harrison Seng, Magnus Ignatius Uhlemeyer, H. A. Vohs, Carl Ferdinand Weller, Clarence William Woodard, Dean Sanford Hendricks, William Wallace Hochdoerfer, Daniel Frank

Those licensed in Missouri in 1914 on reciprocity prior to those reported at the July meeting were as follows:

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Those from Missouri asking reciprocal favors in other states during the year 1914 to date are as follows:

Abrams, C. J.
Alberty, O. L.
Babcock, Henry C.
Bar, Young Cook

Barton, J. E. Beall, Kate W. Bentele, Elizabeth Blackfan, Kenneth D. Bobbitt, A. N.
Bonnot, Edmond
Bowles, F. K.
Buntin, Grover C.
Bust, Laura C.
Castle, Claude H.
Copeland, Carlos
Cox, LeGrand M.

Davis, Elmer T. Doane-Kiefer, F. E.

Einhorn, Rosa Farr, Geo. E. Fleming, Nettie Frank, Walter L. Furlong, J. H.

Grant, H. McD. Greenwood, V. H.

Greer, Mark Gould, Elmer F.

Goltry, C. F. Hall, H. R.

Henderson, R. C.

Higgins, J. R.

Humpville, D. L. Hultz, Eugene

Howell, Wm. L.

James, Lee

Jamieson, Elizabeth

Johnson, C. A. Judge, Ivan B.

Kell, Fred

Kreeger, G. G.

Liston, E. B.

Lowe, Orrin C.

Lynch, E. J.

McBride, Geo. E.

McKelvey, S. W.

McManus, J. H.

Maray, F. A.

Miller, C. H.

Miller, J. E.

Moore, Wm. Day

Norton, H. B.

O'Brien, S. L.

Parmenter, E. L.

Parrish, John Geo.

Peck, Jos. H.

Priessman, F. A.

Purviance, W. C.

Quinton, Chas. B.

Rachels, Jas. H.

Rohrback, E. C.

Ryan, Wm. D.

Sattler, Georgia B.

Sibley, Wm. A.

Simmons, B. B.

Sherlock, Margaret

Smith, C. D.

Smith, Wm. A.

Spalding, J. B.

Strickland, Wm. E.

Sumner, W. C.

Tooley, Geo. E.

VanDeventer, R. W.

Walo, Theresa J.

White, J. T.

Weller, C. W.

Williams, E. Marsh

Woodard, D. S.

Worthen, Lewis J.

Young, H. E.

Zugg, Clarence L.

## **EXAMINATIONS.**

Examinations will be held in Kansas City, Missouri, September 28, 29, 30, 1914, at the Coates House Hotel, 9:00 a. m. each day. Midwife examination will be held on the 30th.

### THE PLAGUE.

On the 30th day of June Surgeon-General Rupert Blue set out the following telegram:

"It is reported that bubonic plague exists in New Orleans in two persons. I will investigate immediately and request that all ports on the Mississippi river front be notified to fumigate and destroy rodents and make analysis to see if any have the plague."

In obedience to this notice a committee of our Board met in St. Louis July 2nd in conference with Assistant Health Officer G. A. Jordan and Assistant Surgeon-General M. F. White, U. S. A. It was decided that all ports on the Mississippi river be notified of conditions in New Orleans and advise them to take action to destroy rats and keep a watch on developments at New Orleans. We also notified Surgeon-General Blue by telegram that we would take any steps that he might think wise and proper after ascertaining that the suspected cases in New Orleans were real plague.

Developments have proven that they have bubonic plague in New Orleans and from newspapers and other reports we learn that to date they have had some twelve or thirteen deaths. In order that our people may be satisfied that every precaution is being taken that can be to stamp out this disease, I wrote to Assistant Surgeon-General W. C. Rucker, who is managing the campaign in New Orleans, to give us conditions as they exist at the present time.

His letter of reply shows that a hard fight is being made to destroy the rats which carry the disease. It is a disease which originated in the inferior animals. In Siberia, the home of the bubonic plague, the mongoose or prairie dog has this disease all the time and is never free from it. It does not seem to kill this animal, therefore they become perfect carriers. Ground squirrels, rats and mice are all susceptible to this disease and it is very fatal when it gets among the rats. The rat is infested by fleas, and when the rat dies the flea deserts the dead body of the rat and bites human beings, and in this way the disease is carried from the rat and scattered among the people. Relief from the disease lies in killing off the rats.

I have just received the following letter from Dr. Rucker:

New Orleans, La., July 30, 1914.

Dr. J. A. B. Adcock, Secretary State Board of Health, Jefferson City, Mo.: Dear Doctor—In reply to your letter of July 27th, relative to the plague eradicative work being done in New Orleans, I desire to inform you that a

careful outgoing quarantine is being maintained of all outgoing vessels, whether interstate, intrastate or over sea. On the water front and at Spanish Fort and West End, a complete fumigation of outgoing vessels is in force. Vessels, which are fumigated prior to loading, receive only inspected freight, which is loaded under the eye of an inspector.

One chief inspector and sixty-three inspectors are employed in the inspection of outgoing overland freight. As you will readily understand, this is a Herculean task, and it is taking a little time to organize this service properly. Cars are first inspected to see that they are rat-proof and rat free, and the freight is next inspected to see that it is rat free. If it is packed in such manner that the containers are liable to form harboring places for rodents, it is required that the goods be repacked. After such inspection cars are loaded under the direct supervision of an inspector, and the car is then closed and sealed with a lead seal having the government device thereon. The car is then labeled "Inspected and passed as rat free conditional upon unbroken seal."

Shipmasters and agents are notified that vessels must be fended off eight feet from wharf, and gangways guarded at all times and raised at night when ship is not actually working cargo. In cases where vessels in any way fail to comply with these regulations, a note is made on the face of their port sanitary statement that they have not complied with outgoing quarantine regulations in force at this port. Vessels are fumigated thoroughly for rat destruction, and a certificate to that effect is given master of the vessel.

A force of 190 men under the direction of six officers is now at work trapping rats in an endeavor to map out exactly the area of rodent infection.

Respectfully,

W. C. RUCKER,
Assistant Surgeon-General, Commanding.
R. H. C.

New Orleans, La., August 1, 1914.

Dr. J. A. B. Adcock, Secretary State Board of Health, Jefferson City, Mo.:

Sir—I have the honor to inform you that the following cases of rodent plague have been found:

- I. Case 22, Louisville & Nashville Railroad Company roundhouse, Julia street and River Front, suspicious July 24th, positive July 31st.
  - 2. Case 23, 840 Burgundy street, suspicious July 24th, positive July 31st.
  - 3. Case 24, 427 Dryades street, suspicious July 24th, positive July 31st.

Respectfully,

W. C. RUCKER, Assistant Surgeon-General, Commanding.

R. H. C.

Sir—I have the honor to inform you that a provisional diagnosis of bubonic plague, bacteriologically confirmed, has been made in the case of Henry Chase, car cleaner, white, male, age 22, residence 2136 Eighth street, employed at Louisville & Nashville Railroad Company shops, Girod and Front streets, sickened July 29th, removed to Isolation Hospital August 2, diagnosis right femoral bubo.

The following case of rodent plague has been found:

Case 25, Toulouse street shed, suspicious July 27th, positive August 3rd.

Respectfully,

W. C. RUCKER,

Assistant Surgeon-General, Commanding.

R. H. C.

New Orleans, La., August 6, 1914.

Sir—I have the honor to inform you that the following cases of rodent plague have been found:

- 1. Case No. 26, 2846 Dryades street, suspicious July 29th, positive August 4th.
  - 2. Case No. 27, French Market, suspicious July 28th, positive August 4th.
- 3. Case No. 28, 918 Toulouse street, suspicious August 1st, positive August 4th.
- 4. Case No. 29, 536 Madison street, suspicious August 1st, positive August 4th.
- 5. Case No. 30, Girod street landing, suspicious July 22nd, positive August 5th.
- 6. Case No. 31, Harmony street wharf, suspicious July 30th, positive August 5th.
- 7. Case No. 32, 918 Toulouse street, suspicious August 4th, positive August 5th.

  Respectfully,

W. C. RUCKER,

Assistant Surgeon-General, Commanding.

R. H. C.

New Orleans, La., August 2, 1914.

Dr. J. A. B. Adcock, Secretary State Board of Health, Jefferson City, Mo.:

Sir—I have the honor to submit the following report of service transactions in New Orleans for the week ending August 1, 1914:

#### OUTGOING QUARANTINE—MARITIME.

Number of vessels fumigated	
Pounds of sulphur burned.	88
	11,277
Number of rats on ships killed by fumigation	225
Outgoing freight inspected (tons)	38,031
Ships on which outgoing freight inspected	12
Clean bills of health issued	21
Foul bills of health issued	7
	-
OVERLAND FREIGHT INSPECTION.	
Cars inspected	3,664
Cars rat-proofed	1,662
Cars condemned	5
Rodents killed in cars	10
	10
,	
FIELD OPERATIONS.	
Number of rota transport	0 647
Number of rats trapped	9,647
Number of dead inspected	$\frac{125}{12}$

### LABORATORY OPERATIONS.

Rats examined		 	9,623
Mus Norvegicus		 	9,268
Mus Alexandrinus		 	211
Mus Musculi		 	1,094
Mus Rattus		 	50
Mus unclassified, putrid			154
Total rodents received at lab			10,677
Number of suspicious rats		 	27
Plague rats confirmed	<mark></mark>	 	15

### PLAGUE RATS.

Case No.	Place.	Trapped.	Diagnosis confirmed.	Treatment of premises.
10	117 N. Liberty street	July 21	July 26	Rat-proofing initiated; intensive trapping and poisoning
11 ,	1171 Annunciation street	July 25	July 26	Rat-proofing initiated; intensive trapping and poisoning
12	518 Darracks street	July 16	July 26	Rat-proofing initiated; intensive trapping and poisoning
13	Stuyvesant docks	July 23	July 27	Rat-proofing initiated; intensive trapping and poisoning
14	1823 Second street	July 21	July 27	Rat-proofing initiated; intensive trapping and poisoning
15	Toulouse street, shed	July 23	July 28	Rat-proofing initiated; intensive trapping and poisoning
16	Cor. Marais and Bourbon Sts	July 26	July 28	Rat-proofing initiated; intensive trapping and poisoning
17	1031 Chartres street	July 22	July 28	Rat-proofing initiated; intensive trapping and poisoning
18	1302 Girod street	July 22	July 28	Rat-proofing initiated; intensive trapping and poisoning.
19	Toulouse street, shed	July 22	July 28	Rat-proofing initiated; intensive trapping and poisoning
20	930 Tchoupitoulas street	July 24	July 29	Intensive trapping and poisoning.
21	Bienville street landing	July 27	July 30	Intensive trapping and poisoning.
22	L. & N. roundhouse	July 24	July 31	Intensive trapping and poisoning.
23	840 Burgundy street	July 24	July 31	Intensive trapping and poisoning.
24	427 Dryades street	July 27	July 31	Intensive trapping and poisoning.

## HUMAN PLAGUE CASES.

Case No.	Name and place of infection.	Date suspicious.	Diagnosis confirmed.	Treatment of premises.
12	Jos. Williams, 611 Commerce St.	July 24	July 26	Vacation, fumigating, rat
13	Rosie Southern, 1904 Bienville street.	July 22	July 26	Vacation, fumigating, rat proofing.

Necropsies	
Total rodents examined, July 8 to August 1	26.14
Cotal human cases to August 1	20,19
Potal rodent plague to August 1	1
Total Total plague to August 1	2

Respectfully,
W. C. RUCKER,
Assistant Surgeon-General, Commanding.
R. H. C.

### THE AUTOBIOGRAPHY OF A FLY.

"The first thing I remember is before I had any legs or wings and was wiggling and squirming in a nice warm bed of manure, where I spent my time eating and drinking the food about me. After a while I began to feel uncomfortable and found that I had grown too big for my skin. Relief came soon and my skin came off, and I ate some more manure and enjoyed it. In a few days more my skin again got too tight, and off it came, and then I went to sleep for I don't know how long. When I awoke I was kicking and struggling out of a very dry, hard skin, and after freeing myself I found I was in the open air and had legs and wings and looked and felt very differently than when I went to sleep. I was thirsty, so tried my wings for the first time and flew to a puddle by the manure pile, and took a long drink, after which I felt much better.

Up to this time I had eaten nothing but manure, but I soon found out that there were other things just as good. I saw a lot of other flies, big and little, around an outbuilding, a privy, not far from the manure pile, so I flew over and had a feast. It was fun to wade around in your food and find so much that you hardly know where to begin. I'm afraid I'm a glutton.

I spent quite a while here and then flew out in the sunshine where the white clothes were hanging on a line and walked over the napkins for a while. Wet things are very pleasant for a time, but my feet get covered with little pieces of food and things that wiggle around and tickle me so I like to wipe them off on a nice white napkin or tablecloth, and then I get around better. While I was enjoying the sun I smelled the most delightful smell that had ever come to me. It came from an open window, so in I flew. Things were smoking on a stove and a woman was mixing up some soft white stuff on a table. There were a lot of other flies about, and one that was too busy eating to see his danger got rolled up in the dough and I never saw him again, so I was careful and flew in and out

and got a mouthful each time. I got rid of some more manure there, too, for the dough was sticky and pulled it off my feet.

Nearby there was a bowl of milk which smelled good, so I flew over and took a drink. Here I nearly lost my life, and if I had not been young and active, I am sure I would never have escaped. Several of us were drinking when the woman suddenly put out her hand in our direction, and we all made a jump. Two got hit and fell right in the middle. She hit me, too, but I landed near the edge and struggled out and flew away, but she caught the other two and pinched them and threw them on the floor, and went on mixing her dough, apparently without a thought that she had killed two of my companions.

I stayed in the kitchen a long time and then went into another room where there was not so much to eat, as I was not very hungry. Here I found a lot of fles and a table set. One poor fly had drowned in the ice water; it must have been awfully cold, and two or three had their feet so tangled up in the butter that they couldn't get away, and the number of little germs that they had wiped off was enormous. They were swarming on the butter, but I had eaten enough that day, and before long it got dark and I was tired, so went to sleep on the edge of a glass, scraping off as much dough as I could. The edge of a glass is a very nice thing to wipe your feet on.

In the morning the man and woman and a child came in to eat, and the woman poured out a glassful of milk for the child—in the glass I had slept on. I guess people like germs and manure and things just as much as I do, for the baby drank all the milk. Day after day went by; we spent part of our time in the house and then we would fly to the manure pile and the little building back of it, and we lived on the fat of the land. Two or three times a day we would get a whiff of that lovely smell from the kitchen and then we would have a race to see which would get there first. The woman would slap at us and the child chase us, but only a few got caught, and we enjoyed the fun. Sometimes one got killed, but we hadn't time to be sorry long, we were so busy eating and wiping our feet and investigating things.

After some weeks of this life, I flew away up in the air one morning and went into a window I had not seen before and found the child asleep on a bed. I went over and walked across his lips, and it was warm and nice, and I wiped my feet and stretched my wings, and almost went to sleep myself; but the child rolled over,

so I flew over to a glass of water on a table and drank some. Pretty soon the woman came in and a man I had never seen before. They went over and looked at the child and felt him, and he asked a lot of questions and the woman seemed very worried. She asked him what the trouble was, and he looked at the child again and then out of the window toward the stable and around the room at us, and then he said something that sounded very funny to me— "typhoid fever; too many flies." What in the world did we have to do with it? However, I'm only a fly. The woman didn't seem to understand either, but after a while she said something about screens and fly paper, and then I flew out to the stable. I saw some flies on fly paper once, and it's no place for me. She must have forgotten about the screens, for I went in and out every day and walked over the child, and found lots to eat about him and the bed, and between this room and the kitchen and the stable we always had plenty to eat.

One morning when I went into the room I couldn't find the child. He was covered up with a sheet, so I went out again. The next day some people came to the house, and a lot of carriages, and I guess they took the child away, for I have never seen him since. The weather is getting cooler all the time and I have trouble waking up in the mornings and feel stiff and lazy and don't want to eat much. I found a closet near the kitchen, and I think I will soon go in there and sleep until next spring, as it's too cold outside. I don't go much farther away from the kitchen now than the garbage can on the porch, and between that and the kitchen I find all I need to eat, and there is always something to wipe your feet on when they get too heavy with food—a piece of bread or cake, a plate or a fork or a spoon, and I'm sure nobody minds."—Selected.

#### HOUND DOG FLY.

"Every fly that comes to town

Keeps a layin' its eggs aroun',

Makes no difference where they're foun',

We gotta keep a'swattin' those flies aroun'."

### OUR PARENTS.

"When Pa is Sick.

When Pa is sick,

He's scared to death
An' Ma an' us

Just holds our breath.

He crawls in bed, An' puffs and grunts, And does all kinds Of crazy stunts. He wants "Doc" Brown, An' mighty quick; For when Pa's ill, He's awful sick. He gasps and groans, An' sort o' sighs, He talks so queer, An' rolls his eyes. Ma jumps an' runs, An' all of us, An' all the house Is in a fuss. An' peace and joy Is mighty skeerce-When Pa is sick, It's something fierce.

#### When Ma is Sick.

When Ma is sick. She pegs away; She's quiet, though, Not much t' say. She goes right on A-doin' things, An' sometimes laughs, Er even sings. She says she don't Feel extra well, But then it's just A kind o' spell. She'll be all right Tomorrow, sure, A good old sleep Will be the cure. An' Pa he sniffs An' makes no kick, For women folks Is always sick. An' Ma she smiles, Lets on she's glad-When Ma is sick, It ain't so bad."

### REPORT OF STATE BACTERIOLOGIST.

The following table summarizes the work of the laboratory for the second quarter of 1914:

May     228     63     23     42     16     8       June     232     90     7     36     12     15       Totals     739     193     44     89     41     28		Rabies	Tuberculosis (not sputum)	Miscellaneous.	Total					
April. May. June.	228 232	63 90	23 7	42 36	16 12	8 15	2	4 8 9	25 20	
	739					2		21		1,224
Typhoid, per cent positive Diphtheria, per cent positive.	 						 			31.8 $18.1$ $20.4$ $49.4$

### Preparation of Specimens for Sending to the Laboratory.

Sputum.—Regulation sputum outfits may be obtained by addressing the State Bacteriologist, Jefferson City, Missouri. Full directions accompany each outfit. Physicians are urged to use this means of sending specimens to the laboratory.

Blood.—It is impossible to examine a single specimen of blood for both typhoid and malaria. For the Widal test for typhoid the blood is best obtained by pricking the lobe of the ear with a flat or a three-cornered needle, or the point of a knife. The ear should first be rubbed with cotton and alcohol, then dried, and the needle should be sterile. Two or three good-sized drops should be collected on filter paper provided by the laboratory for this purpose.

For malaria the blood is obtained in the same way, but must be spread in a thin, even smear on a glass microscope slide. This is done as follows: A small drop of blood is received into the slide near one end by touching the slide to the blood as it hangs from the lobe of the ear. This slide is then laid on a firm flat surface, and the end of a second slide, held at an angle of about thirty degrees with the first slide and touching it, is brought into contact with the drop of blood. In two or three seconds the blood will have run across the slide at the point of contact. Then the second slide is pushed along on the first with a moderate speed, so as to leave a thin, even smear on the surface of the first slide. A second smear may be made in a similar manner on the other slide. Caution: Have slides perfectly clean, handle only by the edges and work rapidly. Allow them to dry in the air without heat.

Blood should never be placed between slides and sent to the laboratory.

Swabs for Diphtheria.—The regulation tube and mailing case, to be obtained from the county health officer or from the State Bacteriologist, should be used for this purpose. Full directions accompany each outfit.

Water.—Specimens of water are examined for their potability, chiefly determined by the absence or presence of colon bacilli, an index to sewage pollution.

For a total bacterial count it is imperative that all samples be iced from the time of taking until they reach the laboratory. For this purpose special containers may be obtained from the laboratory, express charges to be paid both ways by sender of specimens.

Pus.—Pus, to be examined for gonococci, should be sent on a slide prepared as follows: A small amount—much less than a drop—should be mixed on the slide with a small drop of water and thinly spread over an area a half inch or more in diameter, and allowed to dry. Do not press slides together.

Rabies.—Unless the animal shows symptoms of rabies, it should not be killed, but should be held for observation, in which event, if positive, death will ensue in a very few days, in ample time to begin treatment of the patient. Do not kill the animal by a blow or shot in the head, as this may make a proper examination impossible. The head only of the animal should be sent, and that at the earliest possible moment. The head is to be placed in a tin bucket with a tightly fitting cover, which bucket is to be placed in a larger wooden or iron bucket and surrounded by sawdust and iced. The heads of animals freshly killed may be sprinkled with salt, packed in wet sawdust in a strong wooden box and expressed.

*Urine*.—Specimens of urine are examined for tubercle bacilli in suspected cases of genito-urinary tuberculosis.

In sending urine to be examined for tubercle bacilli, the following points should be carefully noted and such information should accompany specimens:

- 1. The specimen should be obtained by catheter, and drawn directly into a sterile bottle.
- 2. It should be stated upon the card accompanying the specimen that it was obtained by catheter.
- 3. Two or four ounces of urine should be sent and a preservative should be used.

*Feces.*—Feces will be examined for tubercle bacilli, and for the ova of intestinal parasites (hookworm).

### Reminders.

It is a violation of the postal laws to mail specimens for examination except in special containers as provided.

Sputum specimens will not be examined unless received in containers as provided for that purpose by the State Board of Health.

Many inaccurate results in Widal reactions are due to lack of sufficient material; also specimens taken before the end of the first week are frequently negative.

For no microscopic examination should the material be pressed between slides. Thin, even smears are desired and give best results.

This laboratory does not make tissue or urine examinations, nor does it make analyses of food products. The first two should be sent to the Department of Preventive Medicine at Columbia, Missouri. The last to the Food and Drug Department of Missouri at St. Louis, Missouri.

The anti-rabic treatment will be administered free of charge at the laboratory to any needy citizen of the State. Treatment cannot be begun for three days after notice is received that the same is expected, thus allowing time to procure a fresh supply for each case.

The routine water analysis consists of the determination of the total bacterial contents and the absence or presence of colon bacilli. In reports on the same the absence of colon bacilli means that the water is free from sewage pollution. Presence of colon bacilli may mean one or more of several things:

- 1. Sewage pollution in greater or less amount.
- 2. Accidental introduction of the germs in taking the sample.
- 3. Their presence in small numbers may have no significance.

The uncertainty of these positive reports is the source of a good deal of misunderstanding.

A notable source of misunderstanding is in regard to typhoid bacilli. Examination is not made for this organism for the following reasons:

- 1. The procedure requires a great deal of time in order to arrive at a definite conclusion.
- 2. Typhoid bacilli often do not live long in water, and a negative finding in such a case might lead to very serious results.
- 3. The test for colon bacilli, which are always present in water containing typhoid bacilli, is a comparatively simple one; therefore it is no longer a part of the routine work of public health laboratories to search for typhoid bacilli in drinking water. If colon bacilli are reported absent and the total bacterial count is within a certain limit, the water is safe from a bacteriological standpoint. If reported present or the total bacterial count is above the limit, it is open to suspicion, at least, and may be decidedly unfit to drink without boiling. Any drinking water from a suspicious source should be boiled for use until the condition of the same has been determined.

#### Rural Sanitation.

The oft repeated statement that the health of a community is an index to its state of civilization is one which should interest each and every citizen. The deviation from perfect health as regards the preventable diseases is due to the fact that the people do not fully realize the cause and effect—therefore the lack of the earnest co-operation of the laity with individual effort.

Whenever is mentioned one of our unwonted diseases our minds naturally revert to the undesirable conditions which exist in some of our crowded cities, but no less are we to respect the rural home with its environments as a breeding place of disease. On the average farm, though surrounded by those magnificent gifts of nature, namely, an abundance of sunshine and fresh air, there are existing conditions that if the truth of the same were presented to the occupants in an understandable manner, would produce great consternation and undoubtedly would stimulate interest in self-preservation.

How often have we seen in such places the unprotected accumulation of filth where the ordinary house fly is permitted to freely spend his hours of leisure and immediately traverses the short distance to the convenient utensils of the ordinary household where he very energetically bespecks everything in sight and is even ad-

mitted to that ever-pleasing retreat of the human stomach, the dining room, and there the edibles produced by the efforts of all nature are contaminated for human consumption, for this small individual is no respecter of persons and, like a naughty child, little effort does he make to wipe his dirty feet before coming indoors.

Little is one aware when some typhoid carrier has come along and together with the existing conditions of an unsanitary privy this nefarious pest is given the privilege of transporting bits of infected matter with astonishing celerity to the least expected places.

The frequently unkempt conditions of the average barnyard are not so amazing, but we view with horror the convenient well from which the household drinking water is supplied, located in a close-by ravine which is at a lower level and freely accepts the entire drainage from such conditions. When from such a well the unsuspecting individual partakes of the cooling draughts of nature's gift, so long as the taste or odor is not noticeable it is quite satisfying. Little does he realize the myriads even to the millions of bacteria he is consuming from the presence of this untold sewage contamination, and, too, this water is utilized in the washing of utensils from which dairy supplies are contaminated for widespread distribution frequently resulting in outbreaks little short of an epidemic.

In our cities the existing unsanitary conditions are eagerly guarded by the general health officer and his assistants, but the question of rural health and sanitation is up to the village physician to whom such matters for advice are referred. A small amount of investigation on his part concerning the environments of the ordinary household into which he is called, with a few suggestions and with due respect on the part of the recipients of such information our general public health should steadily improve.

GEO. H. JONES, M. D.

### VITAL STATISTICS.

Summary Showing Comparison of Important Causes of Death and Registration of Births During April, May and June, 1914.

Statistics compiled for the second quarter of 1914, April, May and June, show there was a total of 9,952 deaths, of this number 4,901 were males and 4,071 females; 8,972 white and 980 black. The month of April showed the greatest number of deaths, 3,659, and June the lowest, 3,109.

Tuberculosis heads the list of causes of death for the quarter with 1,272. Diseases of the heart, 1,144; pneumonia, 1,116; nervous system, 890; Bright's disease, 879; cancer, 563; accidents, 408; diarrhoea and enteritis, 294; respiratory system, 257; suicide, 224; diabetes, 93; typhoid fever, 77; puerperal state, 75; diphtheria and croup, 71; whooping cough, 67; measles, 66; homicides, 56; influenza, 52; scarlet fever, 49; epidemic cerebrospinal meningitis, 18; smallpox, 8; acute anterior poliomyelitis, 1.

There were 17,665 births reported as having occurred during April, May and June, of which 8,877 were males, 8,327 females; 17,204 white and 461 black.

It will be noted from the foregoing that there were 7,713 more births than deaths during the quarter, and an increase of 1,094 over the same quarter in 1913.

### Duties of Physicians in Reporting Births.

The Board of Health wishes to urge that physicians report all births attended by them within ten days after date of birth, as required by law. By so doing a great deal of inconvenience will be saved both the local registrar and the Central Bureau.

As an aid to the prompt filing of birth certificates, we would suggest that each physician carry one or more certificates with him and fill them out before leaving the place of birth. If the child is not named at this time, leave a supplemental report, and instruct the parents to forward same to the local registrar as soon as the child is named.

Our experience, up to the present time, has demonstrated that deaths are more promptly and properly reported than births, and we wish to overcome this by urging the co-operation of all medical men with the local registrar.

Whenever possible, physicians have been appointed local registrars, and this fact, coupled with the duty of the attending physician in reporting births, places, in a great measure, the responsibility for the success of this law upon the medical profession, and we wish to urge your co-operation in this matter.

The failure to record a birth may mean loss of money, lack of proof of legitimacy, difficulty in proof of age for the requirements of school and labor laws, and may work an irreparable wrong to the child in future years. If you have been dilatory in the past in regard to the filing of birth certificates, you should file all delayed reports and be prompt in the future.

In communities where there is no regular embalmer or undertaker the physician last in attendance upon the deceased should consider it his duty to see that the death certificate is properly made out and instructions given to the relatives that it must be filed and the burial permit issued before a legal interment can be made.

### The Cause of Death.

The Central Bureau of Vital Statistics will not accept indefinite or unsatisfactory cause of death. The primary and contributory causes, or complications, if any, and duration of each, must be definitely stated by the physicians or official who makes the "Medical Certificate of Death."

A death which may be the result of either disease or violence should be carefully defined; and if from violence, its nature should be stated, and whether accidental, suicidal or homicidal.

In some cases it may be extremely difficult or impossible to determine definitely the cause of death, even if a post-mortem be granted. If the physician is absolutely unable to satisfy himself in this respect, it is better for him to write "Unknown" than merely to guess at the cause. It would be better if he could specify a little further, as unknown diseases, which exclude causes, or unknown chronic diseases, which exclude the acute infective diseases.

We would add that physicians should refer to the "Physician's Pocket Reference" in stating that "Cause of Death." This pamphlet should be in the hands of every physician in the State, and we will be glad to supply any requests for the same.

It is the desire of the Missouri State Board of Health to make the statistics, as to the cause of death, of the utmost accuracy, until this State shall be one of the first in completeness and usefulness.

TABLE SHOWING BIRTHS FILED WITH THE CENTRAL BUREAU OF VITAL STATISTICS DURING MONTHS OF APRIL, MAY AND JUNE, 1914.

BY SEX AND COLOR (STILLBIRTHS EXCLUDED).

		M	ale.	Fen	nale.
Month.	Total.	White.	Black.	White.	Black.
April	5,369	2,745	42	2,548	34
May	5,170	2,566	75	2,479	50
June	7,126	3,566	137	3,300	123
Totals	17,665	8,877	254	8,327	207
Totals by sex		. 9	, 131	8,	534

TABLE SHOWING DEATHS FROM TWENTY-FOUR IMPORTANT CAUSES, FILED WITH CENTRAL BUREAU OF VITAL STATISTICS DURING APRIL, MAY AND JUNE, 1914 (STILLBIRTHS EXCLUDED).

Cause.	April.	May.	June.	Total.
Typhoid Fever	18	20	39	77
Smallpox	3	1	4	8
Measles.	29	27	10	66
Scarlet Fever	15	20	14	49
Whooping Cough	20	22	25	67
Diphtheria and Croup.	25	29	17	71
Influenza	35	14	3	52
Tuberculosis of Lungs	426	357	365	1.148
Other forms of Tuberculosis	44	41	39	124
Cancer	198	174	191	563
Diabetes	38	27	28	93
Epidemic Cerebrospinal Meningitis	5	. 9	4	18
Acute Anterior Poliomyelitis	1			1
Other diseases of the Nervous System	330	311	249	890
Diseases of Heart and Circulatory System	403	406	335	1,144
Pneumonia and Broncho-pneumonia	608	340	168	1,116
Other diseases of Respiratory System	110	86	61	257
Diarrhœa and Enteritis (under 2 years of age)	53	33	208	294
Acute Nephritis and Bright's Disease	321	309	249	879
The Puerperal State	27	27	21	75
Accidents	135	126	147	408
Suicides	54	98	72	224
Homicides	17	13	26	5€
Other causes	744	694	834	2,272
Totals	3,659	3,184	3,109	9,952

Births and Deaths Reported in Missouri (Stillbirths Not Included) During the Quarter Ending June 30, 1914.

	Counties.	air— 22 April. 22 May lune.	Totals	Andrew— April. May. June.	Totals	Atchison—April. May. June.	Totals	April. May June.	Totals
Pop	ulation, 1910	22,700		15,282		13,604		21,687	
Tota	al births during the	37 41	105	255 200 200	7.1	21 15 19	55	30 32 19	81
	al deaths during the	19 16 18	53	130	32	110	26	24 24 20	. 89
	Typhoid Fever						:		
	Measles	- :- :	:						
	Whooping Cough  Scarlet Fever	111		:::   ::::					
	Diphtheria and Croup		:						
	Influenza	::::	:	:::		:::		1	
	Tuberculosis of the lungs	. 1 3	:			121	:	4-H	
П	Other forms of Tuberculosis	:::			:	1	:	: :	
mpor	Cancer	23 : H		.:.				21-10	
tant (	Meningitis  Diabetes	- : : :	:	:::   <b>T</b> ::		1 : :		: : : :   : = :	
auses	Acute Anterior Poliomy- elitis Epidemic Cerebrospinal	:::	<u>:</u>   :	:::					
Important causes of death.	Other diseases of the nervous system		:	201	:	21 :	•		
th.	Diseases of heart and circulatory system	123	.:	212		21:		ಬ್ಬಾ	
	Pneumonia, Broncho- pneumonia	112	:	21	:		:	444 : -	
	Other diseases of respira-	- : : - : -	:		:			::   =:=	
	A cut e Nephritis and Bright's Disease  Diarrhœa and Enteritis	: : <del>-</del>	:   :				:	::01	
	A cute Nephritis and	- <del>1</del> : :	-	: : : : : : : : :	:	0		401	
	Accidents	: :	:	::			:	:	
	Suicides	- : : :	:	1 · · · 4	:	<del>     </del>	:	2 :1	:
	Homicides	: :	:	:::	:		:	:::	
	Other causes	4870	:	121		ପଦପ	:	924	:

Barry— April May June		28 36 33	12			1	 			2					 		····i			2	1 1 2	2			3 4 4
Totals	16,747	32 18 30	9				 i i		i	1		1 1			2 3 6	1	1		1		1				2 4 6
Totals		80			_	-	 · · ·								 										
April. May. June.	20,000	$\frac{32}{36}$	18	1						2 1			1		 $\frac{2}{2}$	5	1				L	1	2		6 5 5
Totals		90	57				 								 										
April		$\frac{34}{24}$	$^{11}_{12}_{9}$							2 2 1	i	 i				 i	1		i	2	1 2 1 1	 i	i		5 1 1
Totals		82	32				 								 										
Bollinger— A pril. M ay. June.		36 25 19	5				 			 1 1						1	···i					i			
Totals		80	14	· · · ·			 	<u></u>					• • •		 • • • •										
April		$\frac{45}{42}$	$\frac{27}{21}$				 	:::		3	1	2			$\frac{1}{2}$	$\cdots \frac{2}{1}$	5 5 1			1	 5 1	1			$\begin{array}{c} 2\\7\\11\end{array}$
Totals		120	77				 								 		,								
Buchanan— April. May. June.	15,517	12 19					 		···i	i	i	1 2	1	1	 3	1	2	1		3	3			1	3 4
		17	11				 			3		1			 1	2				1	ι	1			2

# BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING JUNE $30,\ 1914$ —Continued.

	Pop	Tota	Total quart										Im	por	tant	cause	es of	death	1.								
Counties.	Population, 1910	Total births during the quarter	al deaths during the	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tubercu- losis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	Other diseases of the nervous system	Diseases of heart and circulatory system	Pneumonia, Broncho- pneumonia	Other diseases of respiratory system	Diarrhea and Enteritis (under 2 years of age).	A c u t e Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
A pril		102 94 95	$105 \\ 101 \\ 74$	i				$\begin{array}{c} 1 \\ 2 \\ 1 \end{array}$			13 13 6	1 1	5 11 8	3 1 1			13 22 7	11 7 5	9 8 4	1 2 2		12 9 8	 1 1	3 3 5	$\begin{array}{c} 1 \\ 2 \\ 1 \end{array}$	 i	212
Totals		291	280																								
Butler— April		39 25 34									2 1 1	1					2	1	6			1	i 1	2 2			
Totals		98	36																								
Caldwell— April		33 30 30	22				· · · · · · · · · · · · · · · · · · ·		:::	: : :	1 3 1			i			2	3 2				2 1 1	∷i	. 1 	2		
Totals	,	93	44																								
Callaway— April. May. June.		27 22 40	28							1 1	· 6		2	i				3 2	8	3 3	i	2 3 2	1	1		 i	
Totals		89	93																								

April	 $\frac{18}{23}$	6		 		 			i					i		i			i				4 3 2
Totals	 61	16		 		 						 											
Cape Girardeau— April	 31 57 35		· · · · · i	2		 ···i		4	1	1			4	2	1 2	7	1 2	2 2	2 1		i		10 4 6
Totals	 123	77		 		 						 	:										
Carroll— April. May. June.	 51 43 24		i						l ]	4		 	1 1 1	4		5 1 1			1 3 1	. 1	1		5 5 4
Totals	 118	55		 		 						 											
Carter— April. May. June.	 9 15 4	3							2			 					. 1		2 i	. 1			2 1 2
Totals	 28	17		 		 						 											
Cass— April	 31 34 33	15	i			 	2		2	1 2			2				2		2 2 1	l i	2		  4 1
Totals	 98	42		 		 						 											
Cedar— April	 27 30 24	11 10 13				 		2	1	2		 	1 2	2 1		1	i i		2 i	. 1			1 3 1
Totals	 81	34		 		 						 								:			
Chariton— April	 39 40 36	19		 		 		:	2	1		 	· · · · · · · · · · · · · · · · · · ·	3 2 4		6 i					1 1	:::	5 5 5
Totals	 115	58		 		 						 											
J.					-	 -	-			-	-	1				-	-	-	=	-	1		

BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING JUNE 30, 1914—Continued.

	Other causes	<b>∞</b> ₩ 4	:	-00	:	370	:	2180	:
	Homicides	:::	:	:::	:	::::	:		:     :
	Suicides	- : :	:	H ::	:	23 :	<u>.</u>   :		.      :
	Accidents	: :=	:	:::		741	.	HH:	.
	The puerperal state	:::	:	1 :::	:	<del>-</del> -: `:	:		
	A c u t e Nephritis and Bright's Disease	3 3	:	1 442		100001			
	Diarrhœa and Enteritis (under 2 years of age).	:::							
	Other diseases or respiratory system			<b>-</b>		·   ::=			
	Pneumonia, Broncho- pneumonia	2,24	:	21 :		დ :⊣	:	8-1:	
j	Diseases of heart and	-03 :		n-m		:000	:	- 60 :	
Important causes of death.	Other diseases of the	: :	:	<b>-</b> ::		210100			
of	Acute Anterior Poliomy-	- :::			:		:		
nses	elitis	• ::::	:		:	:::	:	::::	:
t ca	Epidemic Cerebrospinal Meningitis								
rtan	Diabetes	1 1 1	:	1 : : :	:		:	:	
odw	Cancer	::=			:	1 :::	:		
I	Other forms of Tuberculosis	: :			:	::-		- : : :	
	Tuberculosis of the lungs	:::	:	1 : :			:	1 :	
	Influenza	-:::	:	H ::	:	1:::	:		
	Diphtheria and Croup	:::	:	. : : :	:	:::	:	::::	
	Whooping Cough		:		:	: : :	:	1 :: 1	:
	Scarlet Fever		:		:	:::	:	:::	
	Measles			:::	:		1:	.::::	:
	Smallpox		:		:	:::	1:	:::	
	Typhoid Fever		:		:		:		
	al deaths during the	10017	29	13 6 15	34	25 19 18	52	100	34
	·	43 29	112	7 13 24	44	228 26 26	98	18 23 31	72
	al births during the parter		1		Ì				
Pop	ulation, 1910	15,832		12,811		20,302		15,297	
	Counties.	Christian— 15 April. May. June.	Totals	Clark— 12 April. May. June.	Totals	Lay— April. May June	Totals	Clinton— 15 April. May June	Totals

April	 10 12 19													1	1		 						1 2 2
Totals	 41	16								 			 				 						
Jefferson City— April	 25 11 20		· · · · · · · · · · · · · · · · · · ·			2							 	4 5	i	1	 						3 2 2
Totals	 56	42						·		 			 				 						
Cooper— April	 25 31 27	19	i							 	2		 	4	ī	3	 		1 2 1		1		1 4 4
Totals	 83	55								 			 				 						
Crawford— April May June	 16 28 22	6								 1	1		 	1	2	2	 		1 2	1 1			1 2 4
Totals	 66	26								 			 				 . ,						
Dade— April	21 32 21	9						i		 			 		1		 		3				1 1 2
Totals	 74	21								 			 				 					·	
Dallas— April	 10 12 26	9	i						1	1						1							1 3
Totals	 48	15								 			 				 	:					
Daviess— April. May. June.	 28 21 17	13								 	1		 	3 2 2	1	2	 2	1 3	1 1 2	1			2 4
Totals	 66					1				 			 				 						
				1	1		,	,	,	,	-	(	1	,		,		,	1		1		

# BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING JUNE 30, 1914—Continued.

	Pop	Tot:	Tota										Ir	npo	rtant	caus	es of	death	1.								
Counties.	Population, 1910	Total births during the quarter	Total deaths during the quarter	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tubercu- losis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	diseases ous syste	Diseases of heart and circulatory system	Pneumonia. Broncho- pneumonia	Other diseases of respiratory system	Diarrhoa and Enteritis (under 2 years of age).	A c u t e Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Officer causes
DeKalb— April. May. June.		18 18 17			1						 2 1	1	3	i				2 1 3	1		1	1					
Totals		53	31																								
Dent— April		21 22 21	1 10 6																3				 i	 : i			
Totals		64	17																								
Douglas— April		34 30 12	14 7 8					:::		i			1	:::				2	1		· · · · · · · · · · · · · · · · · · ·		3	i			,
Totals		76	29																	1			·				
Dunklin— April		74 102 101	53 31 61	1							13 2 4						1 3 4				2 i.i	2 1 3	· i	4 2 3			1 1 2
Totals		277	145																								

Franklin— April	 38 41 48	$\frac{36}{26}$	1							1 3 3			∵i	 	$\frac{4}{2}$	5 5 2	1 2 1				l l 1	$\frac{2}{2}$			12 8 8
Totals	 127	89												 				·							
Gasconade— April May June	 28 20 16	6													1 1 1	3					2 i				5 1 1
Totals	 64	34												 										. ,	
Gentry— April May June	 47 24 16		i		1					1				 	3 2 1	4	4		1 1		1 2 1	1			5 4
Totals	 87	61												 											
Greene— April	 28 34 23	22										2			i		2 1		4 2 1		2 2 1	2 			3 6 6
Totals	 85	49												 											
Springfield— April. May June.	 68 62 70	34	2					 i		4	1 1	2		 	12 3 5	4	. 3		3 1		3 4 8	1 4 3	 i 1	 i	18 6 20
Totals	 200	170												 											
Grundy— April May June	 25 20 24	7						:::	:::						3		3 3		3		2 i				2 4 7
Totals	 69	37												 			,								
Harrison— April May June	 56 28 49	20								1	3	4		 	2	32	3	3	2 1	l	4 1	2 i			5 7 3
Totals	 133	53												 			:								
			l	,	(	L	Į.	t.	L	1		L	1	1	L		t.	1	Ĺ	,		1			1

# BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING JUNE 30, 1914—Continued.

	Pop	Tota	Tota										Ir	npor	rtant	caus	es of	deatl	h.								
Counties.	Population, 1910	Total births during the quarter	Total deaths during the quarter	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tubercu- losis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis		Diseases of heart and circulatory system	Pneumonia. Broncho- pneumonia.	Other diseases of respiratory system	Diarrhoea and Enteritis (under 2 years of age).	A c u t e Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
Henry— April		39 29 45	21 19 15	i					1 1 1			···i	2 1 1			::::		1 1 1	5 1	1	2	2 2	∵i		1 1 2		4 5 2
Totals		113	55																								
Hickory— April May June		14 10 18	7 3 1		:::	• • • • • • • • • • • • • • • • • • • •	· · · ·				i i							2 1		· · · · · i					1 	 	2 1
Totals		42	11																								
Holt— April May June		23 29 33	$\begin{array}{c} 15 \\ 6 \\ 4 \end{array}$	1	:::	: : :	:::	:::	:::	:::	1 1	 i					$\frac{2}{1}$		3				: : :				2 1 1
Totals		85	25														,										
Howard— April. May. June.		19 24 20	7					i			4 2 4	1	2 1					2				i		 i	1 :::		3 
Totals		63	35																							-	

Howell— A pril. May June.		34 36 35	10							2	i	1			::::	$\begin{vmatrix} 2\\1\\2 \end{vmatrix}$	1	3 1 1	::::		 i 1		1 1 1	<sub>i</sub>	:::	3 1 9
Totals		105	42				 																:			
Iron— April. May. June.		22 18 18	7 6 10				 			3		···i									i	···i	···i		1	2 2 4
Totals		58	23				 																			
Jackson— April		63 49 90	29	• • • •						3			 1 1			3 3 4	5	4	i			1			<sub>2</sub>	6 9 17
Totals		202	107				 			· · · ·																
Kansas City— April May June		373 371 421	330 321 315	5 2 4		1	2 1 1		1	43 43 35	3	24 13 18	2	4	1	26 27 19	50	37	13 11 6	2	23 42 23	3	8 9 23			58 48 73
Totals		1,165	966				 																			
Jasper— April		82 59 71	36 43 32	4				1 		£	3 1 3 1	1 1 1				6 4 7	5 9 2	4	1 1	i	1 2 2	i		i		9 9 6
Totals		212	111				 																			
Joplin— April. May June.		64 46 18	37 48 50	 1 1			 			8	3	1				1 4 7	9 4 3	7	1	5	5	  1	 1 5	1 7		2 9 7
Totals		128	135				 																			
Webb City— April		14 23 15	11							3		1			::::				i		2		··· <u>·</u> 2			2 3 3
Totals	<mark>.</mark>	. 52	37				 				·															
	]				,	-		)		(	,					1		)		,		[		-		

MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING JUNE 30, 1914—Continued BIRTHS AND DEATHS REPORTED IN

 $\frac{11}{6}$ 107 21334 Other causes..... Homicides..... Suicides..... Accidents The puerperal state.... 101 407 Acute Nephritis and Bright's Disease..... .01 CI Diarrhœa and Enteritis (under 2 years of age). C) Other diseases of respiratory system..... SHS 90 Pneumonia, Bronchopneumonia...... death. 0100 100m Diseases of heart and circulatory system.... P07 Other diseases of the of nervous system..... Important causes Acute Anterior Poliomyelitis.... Epidemic Cerebrospinal Meningitis..... Diabetes..... 210 Cancer.... Other forms of Tuberculosis...... 90101 210 Tuberculosis of the lungs.... Influenza..... Diphtheria and Croup... Whooping Cough..... : Scarlet Fever..... Measles..... Smallpox.... Typhoid Fever..... 23 28 14 453 Total deaths during the quarter.... 17 27 40 31 27 47 39 40 26 Total births during the quarter..... 27,878 12,40317,36326, Population, 1910..... April.
May.
June.... Johnson— April. May. Counties. Totals. Totals. Totals

Lafayette— April	 53 38 51	25	: : :		• • •		 • • •			5 1	 1	 6 2 1	3			2		2 i	3	· · · · · · · · · · · · · · · · · · ·		<u>.</u> 7
Totals	 142	94				 	 				 	 						• • •	• • •			• • • •
Lawrence— April May June	 60 45 34	17 21 29					 	2			 	 1 4 4		2	3 2 2 - ]		2		i	i	: : :	4 9 8
Totals	 139	67				 	 				 	 										
Lewis— April. May June.	 8 18 22	10				 		2			 		3				3			:::		4 1 6
Totals	 48	34				 	 				 	 										
Lincoln— April	 22 24 32	14						31		2	 	 2	1 3 2	4			1		····2	 i		3 3 4
Totals	 78	42				 	 				 	 										
Linn— April. May. June.	 34 37 49	20						$\epsilon$	1		 1	 2 3 1		2 2 2	2	1		3 2	1			6 3 3
Totals	 120	57				 	 				 	 										
Livingston— AprilMayJune	 37 36 19	11				 		1				 4 4 1	2			i						5 1 6
Totals	 92	45				 	 				 	 										
McDonald— April	 $\begin{array}{c} 4 \\ 2 \\ 2 \end{array}$					 	 			1	 	 		]								2
Totals	 8	8	<u></u>	<u></u>		 	 				 	 								<u></u>	<u></u>	

BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING JUNE 30, 1914—Continued.

	Counties.	Macon—April. May. June.	Totals	Madison— April May June.	Totals	Maries— April. May. June	Totals	Marion— April May June.	Totals
	ulation, 1910	30,868		11,273		10,088		12,231	
Tota	al births during the	845 222 22	142	24 20 24	89	111	41	15 14 10	39
Tota	al deaths during the	23 29 .	. 99	780	21.	111.55.7	23	13	28
	Typhoid Fever								
	Measles	-:::							:
	Scarlet Fever						:		:
	Whooping Cough	:::	:	:::		:::	:	] : T	:
	Diphtheria and Croup	<del>- :- :</del>	:		:		:		:
	lungs Influenza	: : :					:		:
	Tuberculosis of the	:		101		: : : :	:	1 2 2	
	Other forms of Tubercu-	w							:
Imp	Diabetes	311	:						:
ortan	Epidemic Cerebrospinal Meningitis	- ::::			:		:		:
t caus	Acute Anterior Poliomy- elitis	- :::	:	:::	•		:	:::	:
ses of	Other diseases of the nervous system	49 :				: T :	:		:
Important causes of death.	Diseases of heart and circulatory system		:	- :-	:	8 : :	:	1 1 1 1 3	:
ن	Pneumonia, Broncho- pneumonia	601	:	23 : :	:		:	21	:
	Other diseases of respiratory system					T ::	:	eo : :	:
	Diarrhœa and Enteritis (under 2 years of age).	:::	:	: :				:::	:
	Acute Nephritis and Bright's Disease	. 31		<b>7</b> : :	:	TT :	:	T ::	. :
	The puerperal state	<del>- :-</del>							:
	Accidents	. : :		:::	:	to : : .	:	· · · ·	:
	Homicides	<del>- : : : :</del>			:	:::	:		:
	Other causes	21.08	:	1000			:	2-18	

,	•	-
ı		
ı		

Hannibal— April May June.	 34 23 28	28	 		 i 1	 i	1 2 1		 4 5		 	$\begin{array}{c} 2\\1\\4\end{array}$	2	2 2 1			i	2 6 		$\begin{bmatrix} 1 \\ 2 \\ \vdots \\ 2 \end{bmatrix}$	1	10 7 9
Totals	 105	79	 		 	 					 											
Mercer— April	 18 16 24	10	 			 	j		i		 	i					i					3 3
Totals	 58	24	 		 	 					 			,	ĺ		,					
Miller— April	 32 24 33	$\epsilon$	 		 :::				1		 			1	. , .			2 2 		i ::		2 1
Totals	 89	15	 		 	 					 											
Mississippi— April May June	 21 39 31	14	 				2	3 2 1 1 2	. 1		 	2		3			1					5 5 7
Totals	 91	49	 		 	 					 											
Moniteau— April May June	 29 14 29	ç	 					3	1									 4 3			1	2 2 7
Totals	 72	38	 	,	 	 					 											
Monroe— April	 21 26 22	13	 			 			2	1	 	[	2	3		11		1 1 3			i	5 4 4
Totals	 69	42	 		 	 					 											
Montgomery— April May June	 21 19 28	11	 		 			3 L	1	1	 	3	1	1		1			1		i	
Totals	 68	51			 <u></u>	 ·			<u></u>		 						.			<u>.</u>		<u></u>

BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING JUNE 30, 1914—Continued.

								30	, 19	14-	-Con	tinue	a.														
	Pop	Tot	Tot										Ir	npo	rtant	caus	es of	deat	h.								
Counties.	Population, 1910	Total births during the quarter	Total deaths during the quarter	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tubercu- losis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	Other diseases of the nervous system	Diseases of heart and circulatory system	Pneumonia. Broncho- pneumonia	Other diseases of respiratory system	Diarrhœa and Enteritis (under 2 years of age).	Acute Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
Morgan— April. May June.		17 15 19	5 1 8																i					 i		: : :	
Totals		51	14																								
New Madrid— April		51 64 54	24 21 25								3 2 2	· · · · i	 1 1				2 1 1	1 1 1	8	1	. 1 2 6	2		1 2 1			10
Totals		169	70																								
Newton— April		49 55 43	19				1											1 3 3	2 1 1	•	<sub>1</sub>	2 1 1		1 			9
Totals		147	62																								
Nodaway— April		41 48 45								i	2 1 2		4				1	2 5 1	3 3	2		1	 	2 1 1		1 :::	2
Totals		134	68																			·					
					-	-	-																				

Oregon— April May June	 27 25 26	9		 		  		2		1		 	1	1		j	l	i		i 			3
Totals	 78	26		 		 					. : .	 											
Osage— April	 29 35 31	14 4 6		 		 		1				 			1		3						3 1 2
Totals	 95	24		 		 	·					 											
Ozark— April	 27 18 27		i					2 1 1				 		i	2 1							:::	3 4 1
Totals	 72	20		 		 						 											
Pemiscot— April	 33 27 45	15				 :::	1	2									. 1		i		··i		4 4 8
Totals	 105	51		 		 						 											
Perry— April. May. June.	 41 23 23	12 14 7				 		1				 	4	···i	1		l			1 2			4 3 4
Totals	 87	33		 		 						 											
Pettis— April. May June.	 19 15 17	7 5 3		 		 		i															$\begin{array}{c} 3 \\ 1 \\ 2 \end{array}$
Totals	 51	15		 		 						 											
Sedalia— April	 40 32 32	24 12 23				1		2	i			 		2		3		2		1			3 3 9
Totals	 104	59		 	· · ·	 						 											

BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING JUNE 30, 1914—Continued.

	Counties.	Phelps— April. May. June.	Totals	Pike— April. May. June.	Totals	Platte— April. May June.	Totals	Polk— April. May. June.	Totals
	ulation, 1910	15,796		22,556		14,429		21,561	
Tota	al births during the	250 26 26	75	18 32 13	63	26 14 26	99	75 25 25	100
Tota	al deaths during the	7	25	16 24 18	58	14 16 14	46	18 17 17 9	44
	Typhoid Fever	- : : : - : <del>- :</del>		: : :	:		÷		
	Measles	:::	:		:	: :		:::	
	Scarlet Fever	:::	:		:		:		
	Whooping Cough	:::	:	:::	:	T : T	:	:::	
	Diphtheria and Croup		:	:::	:				
	Influenza	:::	:		:	:::	.	<b>-</b> - : :	
	Tuberculosis of the			100	:	: 00		400	
	Other forms of Tuberculosis			. :01	:		:	:::	
Im	Cancer	H :	:		:	: :	:	2777	
port	Diabetes	: :∺	:			: : =	:		
ant ce	Epidemic Cerebrospinal Meningitis		:		:		:		
sesn	Acute Anterior Poliomy- elitis	:::							
Important causes of death.	Other diseases of the	. :01		H 60 60		4-18		H4H	
'n.	Pneumonia, Broncho- pneumonia  Diseases of heart and			000		.0101		: : :	
	Other diseases of respiratory system		:	13	:	22 .		20.	
	Diarrhœa and Enteritis (under 2 years of age).	: :	:		:		÷		
	Acute Nephritis and Bright's Disease	212		: <b>ෆ</b> ෆ		21-2		21	
	The puerperal state		:	:::	:	: :	:		
	Accidents	: : :	:	::-	:	0		: :	
	Suicides	: :	:	::-		:::	:	: : :	:1
	Homicides	:::	:			. : : :	:	:::	
	Other causes	818	:	100		9 + :		444	:

Pulaski— April	 37 26 22	10			 		i	11 12 2						2		1					:::	:::	5 2 1
Totals	 105	33		 	 							 					• • • •						
Putnam— April. May. June.	 24 29 21	16 4 3	i										4					2	1	• • • •		:::	6
Totals	 74	23		 	 							 			:								
Ralls— April. May. June.	 18 19 17		i		 					1		 		1							:::		2 1
Totals	 54	17		 	 							 											
Randolph— AprilMayJune	 26 22 18	16						1		2		 	2 5 1		3					 i	1		1 1 5
Totals	 66	34		 	 	٠, ٠ ٠						 											
Moberly— April	 15 20 - 15	19						2	2	1		 	2 5 4	-5	2		••••	 1 1			· · · i		1 2 5
Totals	 50	47		 	 	:						 											
Ray— April. May. June.	 40 30 <b>3</b> 3		2		 			2		[		 	i		6 2	i							4 3 10
Totals	 103	54		 	 							 		·									
Reynolds— April May June	 23 23 27	7		 · i	 								i		1		<sub>i</sub>			``i		:::	3 2 1
Totals	 73	18		 	 							 											
									-	1	]		,			)			,		-	,-	-

QUARTER ENDING JUNE (STILLBIRTHS NOT INCLUDED) DURING THE 1914—Continued. 30, MISSOURI AND DEATHS REPORTED IN BIRTHS

5049 111 100 757 Other causes..... Homicides.... Suicides.... · 80 H Accidents.... The puerperal state.... Haa ಬಹಲ Acute Nephritis and Bright's Disease..... Diarrhœa and Enteritis (under 2 years of age). · 07 H Other diseases of respiratory system..... 11 Pneumonia, Bronchopneumonia...... Diseases of heart and circulatory system.... 010000 important causes of death. 20 · 27 H ರಾಣಾ Other diseases of the nervous system..... Acute Anterior Poliomyelitis Epidemic Cerebrospinal Meningitis..... Diabetes..... Cancer..... Other forms of Tuberculosis..... O .01 ಣಣಣ of Tuberculosis Influenza.... Diphtheria and Croup... Whooping Cough.....  ${\bf Scarlet\ Fever}.....$ Measles.... Smallpox..... Typhoid Fever.....  $\omega \omega \infty$ 22 29 18 69 2000 322 Total deaths during the quarter..... 7 29 36 24 30 34 88 24 26 31 83 55 54 192 Total births during the quarter..... 695 16,412 35,738 24, 13, Population, 1910..... St. Charles—April.
May.
June. St. Francois—
April.
May.
June..... Counties. Totals. Totals. Totals. Totals

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•	-
•	•

Ste. Genevieve— April	 13 15 34	12						i							5 		2	1				2 4 3
Totals	 62	28	 			 	 				 											
St. Louis— April May June.	 101 127 119	114	 		1	 2	 36	7 · · · · · · · · · · · · · · · · · · ·	3	2	 	4	11	' 14	3	3 1 5 3 . 4	3 8	5 3 5	10	4	···i	18 10 15
Totals	 347	350	 			 	 				 											
Saline— April. May. June.	 59 45 55	22	 			 	 1 1	3 1 2	. 2		 	2	1	1		1 1 4	1 3	3	2			11 8 6
Totals	 159	88	 			 	 				 	:										
Schuyler— April May June.	 14 11 15	6	 				]		1		 	2					1					4 1
Totals	 40	22	 			 	 				 											
Scotland— April	 17 8 18	3	 	: : :			 1				 	$\frac{1}{2}$	1	3	: : : :	3			  i	2		3
Totals	 43	29	 			 	 				 											
Scott— April. May. June.	 60 47 65	27	 			 		1				1 5		4 3	1	6	1	1 1	3	· · · · · · · · · · · · · · · · · · ·		5 7 13
Totals	 172	68	 			 	 				 			, .								
Shannon— AprilMay. June.	 25 31 22	8 5 8	 	:::			 1				 					i	::::			1		2 4 4
Totals	 78	21	 		<u></u>	 <u></u>	 		<u></u>		 						, .			<u></u>		

07000

Other causes..... Homicides.... .01 Suicides..... Accidents....... The puerperal state.... 201-A c u t e Nephritis and Bright's Disease..... . 10 0 Diarrhœa and Enteritis (under 2 years of age). Other diseases of respiratory system..... 30 Pneumonia, Bronchopneumonia...... death. 100 .01 Diseases of heart and circulatory system.... Important causes of 21504 447 Other diseases of the nervous system..... Acute Anterior Poliomy-elitis..... Epidemic Cerebrospinal Meningitis..... Diabetes..... CI Cancer..... 31, 1914—Continued. Other forms of Tuberculosis..... HOH 10 Tuberculosis of lungs..... : | Influenza....... Diphtheria and Croup... Whooping Cough..... Scarlet Fever..... : Measles..... Smallpox..... Typhoid Fever..... 46 21 32 946 17 14 22 10 66 Total deaths during the quarter..... 110 19 16 31 81 75 63 21 13 30 64 40 43 43 Total births during the quarter..... 27,807 18,598 11,55914,864 Population, 1910..... Stoddard—
April.
May.
June... Stone—
April.
May.
June. Totals..... Sullivan—April.
May.
June.... Counties. Totals. Totals. Totals.

MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING JUNE BIRTHS AND DEATHS REPORTED IN

Taney April	 20 19 11	6		-		 							 	2						i			 2 4 1
Totals	 50	23				 							 										 • • • •
Texas— April	 50 47 52		 1		1 2 1	 			2				 	3 2	1	2					1		 6 6 10
Totals	 149	63				 							 							.			 
Vernon— April. May. June.	 36 39 37					 					1		 	$\begin{array}{c} 4\\11\\2\end{array}$	5			i i		1 2 2	2	2	 5 7 4
Totals	 112	83				 							 										 
Warren— April	 16 8 13	7			 		: : :						 	 1 2	2 1 1	1		1 1			···i	···i	1 3 1
Totals	 37	21				 ,							 										 
Washington— April	 30 27 24	13				 		···i	:					3				١		l	2	:::	1 4 2
Totals	 81	30				 							 										 
Wayne— April	 34 30 22	7			2	 				i			 			1	 j			l 1			 5 2 3
Totals	 86	31				 							 										 
Webster— April. May. June.	 36 18 41	10				 			2			1	 	1 2					1	1			 5 2 4
Totals	 95	35				 							 										 

BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING JUNE 30, 1914—Continued.

				-																							
	Pop	Tot	Tot										In	npo	rtant	caus	es of	death	1.	х							
Counties.	Population, 1910	Total births during the quarter	Total deaths during the quarter	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tubercu- losis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	Other diseases of the nervous system	Diseases of heart and circulatory system	Pneumonia, Broncho- pneumonia	Other diseases of respiratory system	Diarrhosa and Enteritis (under 2 years of age)	Acute Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
Worth— April. May June.		8 17 13	6			r .							l				1 2		1 1					1			$\frac{1}{2}$
Totals		38	15																								
Wright— April		27 44 39	15 19 14				:::	 i						Ų.			<sub>2</sub>	 2 1	4 5					∵i	: : :		4 3 5
Totals		110	48																								
St. Louis city— April May June		$1,071 \\ 1,096$	1,029 923 904	4	:::		19 10 13	9	15 15 8	5 3	118 68 83	15 17 14	54 54 58	12 5 12	1 3 2		57	126 158 119	119	31	13	126 105 96	7	29	21 38 42	8 8 10	$162 \\ 165 \\ 205$
Totals		3,404	2,856																								
Totals for State— April. May. June.		5,369 5,170 7,126	3,659 3,184 3,109	20	3 1 4	27	15 20 14	20 22 25	25 29 17	35 14 3	357	41	198 174 191	27	5 9 4	1	330 311 249	406	340	86	33	321 309 249	27 27 21	135 126 147	54 98 72	13	
Grand totals		17,665	9,952	77	8	66	49	67	71	52	1148	124	5 <b>6</b> 3	93	18	1	890	1144	1116	257	294	879	75	408	224	56	2272

## **MISSOURI**

# STATE BOARD OF HEALTH



# QUARTERLY BULLETIN

#### **NEW SERIES**

VOL. 4

JULY-SEPTEMBER, 1914

No. 3

#### MEMBERS OF THE BOARD

	T. A. SonBonne Terre
G. O. Cuppaidge, M. D., Vice-Pres. Moberly	R. L. Wills, M. DNeosho
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T. H. Wilcoxen, M.	D., Bowling Green.

Dr. George H. Jones, State Bacteriologist, Jefferson City. C. J. Kaiser, Statistician, Jefferson City.

### **CONTENTS**

To Public School Teachers	How Shall we Abate Disease and Crime, through Education	46 46 49 50 50 51
tion, by Victor C. Vaughn, M. D 20–36	ber 30, 1914	2-74

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### State Health Laws Dealing With Public Schools.

#### CHAPTER 106, ARTICLE 2.

Sec. 10786. Contagious diseases among pupils.—It shall be unlawful for any child to attend any of the public schools of this State while afflicted with any contagious or infectious disease, or while liable to transmit such disease after having been exposed to the same. For the purpose of determining the diseased condition, or the liablilty of transmitting such disease, the teacher or board of directors shall have power to require any child to be examined by a physician or physicians, and to exclude such child from school so long as there is any liability of such disease being transmitted by the same. A refusal on the part of the parent or guardian to have an examination made by a physician or physicians, at the request of the teacher or board of directors, will authorize the teacher or board of directors to exclude such child from school; and any parent or guardian who shall persist in sending a child to school, after having been examined as provided by this section, and found to be afflicted with any contagious or infectious disease, or liable to transmit the same, or after having refused to have such child examined as herein provided, shall be deemed guilty of a misdemeanor, and, upon conviction, shall be punished by a fine of not less than five nor more than one hundred dollars. (R. S. 1899, sec. 9765, re-enacted, Laws 1909, p. 770.)

When smallpox exists in the neighborhood of school, board may exclude pupils who refuse to be vaccinated. In Rebeneck, 62 A. 8; State ex rel. v. Cole, 220 Mo. 697.

Schools cannot be closed on account of contagious diseases unless ordered by board of health, or on agreement of both parties to the contract.

### Typhoid Fever Warning.

Typhoid fever is a preventable disease, yet there were nearly 900 people who died in the State of Missouri in 1913 from this disease. It is usually water-born and the germs may be transmitted through other agencies such as milk, and the germs may be carried by flies and insects and deposited upon foods such as fruits and vegetables that are eaten raw, etc.; and it is frequently transmitted in this way, yet with precautionary measures, such as boiling all water that is used, pasteurizing milk and carefulness in handling and eating raw vegetables and fruits, the disease seems to spread in some localities.

Barry county seems to have been a fair field for this disease the last year or two, Monett and Cassville being the central focii of this trouble in the county. Specimens of water have been sent in from these places, and especially from Monett, our bacteriologist has examined the water supply from there at frequent intervals for more than a year and without a single exception, found the water to be polluted, and we have given to them our best counsel and sent them at two different times Dr. Wills, a member of the State Board of Health, and one time sent our bacteriologist, Dr. Jones, to make analysis of the water on the ground, and survey the surrounding conditions, and also had Mr. Fricke, State Food and Drug Commissioner, to visit Monett in company with these two doctors and make an inspection of the dairies and dairy products.

Thorough instructions were given the citizens of Monett after this inspection, regarding the care that should be taken in preventing the further spread of the disease. They were also instructed to use typhoid vaccine as a preventative, yet I understand they have had some difficulty in securing this vaccine for the poor people. Will say that the State Board of Health recently made an agreement with the curators of the State University to handle the vaccine which they are having their scientist, Dr. M. P. Ravenel, prepare to be distributed to all physicians throughout the State, who may ask for it, to immunize their patients. Dr. M. P. Ravenel is one of the leading bacteriologists, chemists and pathologists in the United States. So the products that come from the University of Missouri through his hands are clean and pure.

We have had recent communications from Monett stating the disease still prevails at that place without much abatement. We advise that the physicians at that place, insist upon the citizens of Monett, Cassville and surrounding country, being vaccinated; and if they will but send to this office, or to the Department of Preventive Medicine, Columbia, Mo., they will receive this vaccine free of charge. If they will all take the treatment, typhoid fever will in a very short time be a thing of the past in Barry county.

The following is the report from Dr. Wills, and Dr. Jones, who last investigated conditions in Monett:

Jefferson City, Mo., August 20, 1914.

To the Missouri State Board of Health, Dr. J. A. B. Adcock, Secretary:

On August 10th we visited Monett, Mo., and endeavored to determine the cause of the epidemic of typhoid fever that has been and is now raging in that city.

The results from a series of laboratory analyses of the city water supply during the past year left it open to the gravest suspicion, and, together with the frequent complaints received concerning the improper disposal of sewage, prompted us to consider these two as the most probable causes for the spread of the disease.

Upon investigating the septic tanks, which are less than a mile from the center of the city and inside the corporate limits, we found them to be in a surprisingly unkempt condition. These tanks, which are of recent construction, are well built and adequate for the purpose, but so far as we could learn have received no care whatever,

they serving simply in the capacity of a cesspool which overflows, allowing the entire contents to pass out untreated and which flows for several miles as an open sewer, the stench from which is almost unbearable.

These tanks are located upon a small tract of ground which is owned by the city and which is used for a public dump and burying ground. Here we noted the uncovered contents from several dry closets and numerous bodies of unburied animals. These conditions make an ideal breeding place for flies and mosquitoes, and in the immediate vicinity we found six cases of typhoid fever.

An inspection of the wells and pumping station which supply the city water left little doubt as to the probability of their being a source of infection. These wells, which are about one hundred and fifty feet deep, are just a few feet apart and located almost in the heart of the city at a lower level than a large resident district, and in a good position to accept the surface drainage therefrom. They are located along what would be the alley and through which is laid the sewer which supplies the abovementioned portion of the city. For convenience a few feet of this sewer was taken up and laid along the south side of the pump house about twenty feet from the wells. From this sewer there is the greatest possibility of contamination, and we were informed by good authority that until a few days previous to our visit this sewer was occluded near the pump house, a short distance above which it had burst, and the overflow passed freely to the surface and escaped by way of a nearby ditch running parallel to the sewer.

The water is evidently supplied by an underground lake, the pumps are working continuously, and a standpipe is used to secure pressure. No other reservoir is used and the water receives no treatment whatever. The wells supplying water to the St. Louis & San Francisco Railway Company's shops, depots, the Harvey House, etc., are located less than one hundred feet from the city wells and practically the same conditions prevail.

We visited several private sources of supply; also the ice factories. Specimens from these as well as from the above mentioned wells were taken for analysis.

We were informed that a number of milch cows from the city were being pastured in the Wormington pasture, along which flows the unprotected sewage from the septic tanks, and into this pasture a surplus of water following a rainstorm would easily wash a large amount of sewage to be deposited upon the grass, and also the cows might freely drink from the overflow.

This last phase in particular, together with the various dairies, slaughterhouses, etc., were for several days the subject of a most rigid investigation by Mr. F. H. Fricke and his assistant, Mr. J. E. Alsup, of the State Food and Drug Department, by whom specimens from all these, together with other food products, were taken for analysis.

Upon suggestion, the city officials acted at once by having a good supply of lime placed in the septic tanks and promised to keep the same well supplied until receiving further suggestions for additional treatment.

The public, through the press, has been freely advised to consume no water or milk unless boiled, to protect closets and garbage from flies, and also encouraged to take advantage of the immunizing properties of the typhoid vaccine.

A recent city ordinance requiring all cesspools to be connected with the city sewers is being rigidly enforced.

At a recent city bond election it was carried to construct a new waterworks system. The same as proposed is to be of modern construction. It is to be supplied by deep wells which are to be located some distance outside the city limits in the vicinity of other deep wells, the supply from which has been proven by an analysis to be above reproach. In addition, the new plant will have reservoirs, etc., for the proper treatment of the water should it be needed.

Following are the results of analyses on samples taken at Monett on August 10, 1914:

Source.	Colon bacilli.
Tap city plant	III
Tap Knapp's Pharmacy (city supply)	
Tap Frisco plant	III
Tap Harvey House (Frisco supply)	
Tap Copeland's Ice plant	
Tap railways ice plant	
J. H. Wormington, well	III
C. B. Condrine, well	II
Lane's Dairy well	. ,
L. W. Comb's well	
T. J. Molohart, well	III
Armstrong's cistern	
Pete Wormington's well	III
T. J. Molohart, "milk"	O. K.

Of the above specimens nine show the presence of great contamination. Among these are all the specimens taken from sources supplied by the city and Frisco wells.

In conclusion, the prevailing epidemic of typhoid fever will not be relieved as long as the present sources of water supply are in general use.

It is, therefore, necessary that the new source of supply be established as soon as possible. Until such time no water or milk should be consumed unless boiled, nor should any water be used in washing food products unless the same has been boiled or is boiled with said foods in preparation. This should apply to water from both city and private supply.

The proper authorities should compel the removal of garbage and rubbish and the proper disposal of the contents of dry closets, the bodies of animals, etc., at the city dump, either by burial at a proper depth or by burning.

The septic tanks must receive constant care with sufficient disinfectants and deodorants to render the escaping sewage as inert as possible.

Written suggestions for the care of the same have been sent to the mayor of that city.

Respectfully submitted,

George H. Jones, M. D.,
State Bacteriologist.
R. L. Wills, M. D.,
Member State Board of Health.

# Typhoid Vaccine.

After November 15, 1914, the Department of Preventive Medicine of the University of Missouri will supply typhoid vaccine to any reputable practitioner of medicine in Missouri upon request.

The vaccine will be put up in packages containing enough material to immunize four persons. Directions for use of the vaccine will accompany each package. The vaccine will be made in the University Public Health Laboratory under the direction of Dr. M. P. Ravenel, Professor of Preventive Medicine in the University of Missouri.

Physicians may obtain the vaccine by addressing requests to either of the following:

Missouri State Board of Health, Jefferson City, Mo., or Preventive Medicine, University of Missouri, Columbia, Mo. Demands for moderate quantities of vaccine can be supplied without delay and free of all cost except express charges.

When vaccine is desired in quantites sufficient to immunize large numbers of people, such as military organizations, inmates of institutions, students in schools and colleges, etc., etc., it will be supplied free, but such special needs should be communicated ten days in advance of the probable time of need to the Department of Preventive Medicine at the University, that specially adapted packages and shipping arrangements may be made.

GUY L. NOYES, Acting Dean.

### Licenses Issued.

The following is a list of all the doctors who have been licensed in the State of Missouri by examination and reciprocity since our last bulletin was published:

Alexander, William Cobb Bassman, Abraham Blass, Rosa Barnard Bonhasin, Abraham Bunten, Joseph Cook Cleveland, Horace F. Compton, James Roy Copple, Carroll Reid Davis, Charles Fletcher Duncan, Francis Ralph Emerson Dusch, Dale Lawrence Gay, Ray Jackson Guyot, Julian DeVoine Hammler, Christiana Victoria Johnson, Charles Daniel Kessler, Ernst Brill Leitch, George Wesley Leslie, James Frederick Lynch, Richard Calvin Numbers, Donald S. Owens, Roy Jefferson Pennington, Geo. R.

Radford, Arthur Franklin Ralls, Loren Birtsell Reynolds, Stephen Woodson Shelby, Mitchell Hudson Simpson, James Augustus Smith, Elva Carmain Smith, Samuel Thomas Thomas, Hollis Sherman Tillman, Lon M. Trimble, Eli Welch, Gilford Nelson Young, Herbert Earl Key, George Barnard, recip. Harrar, Chas. Franklin, recip. Carder, T. A., recip. Smith, W. W., recip. England, C. M., recip. McCartney, O. P., recip. Culpepper, Wm. S., recip. Hagan, Herbert H., recip. Stofer, John Wm., recip.

The following is the list of doctors from Missouri who have been endorsed for reciprocity with other states, with names of states to which they have been endorsed:

Baskette, H. W	California
Berghoff, Robert S	Illinois
Bussard, C. F	Michigan
Carter, J. J	California
Cordonnier, L. J	Texas
Fairchild, A. W	Kansas
Hammer, John E	Kansas
Holder, T. B	Utah
Hopper, Rob't Lee	. Indiana
Jenkins, Ralph E	Kansas
Jones, H. S	Texas
Leisure, Elmer A	Kansas
McClurg, C. B	Illinois

McKenney, J. A	California
Middlebrook, Robert	Minnesota
Miller, Jos. Edw	Illinois
Movius, H. J	North Dakota
Portoghese, Nunzio	Illinois
Redwine, J. T	Kansas
Rosebrough, F. H	Texas
Stokes, C. M	Illinois
Stroup, E. R	Iowa
Turner, H. H	Illinois
Vonachen, J. R	Illinois
Wheeler, B. H	Illinois
Zugg, Clark Wm	Kansas

## Board Meeting.

The State Board of Health will meet for examinations at the Jefferson Hotel, St. Louis, Mo., December 14, 15, 16, 1914. Midwives will be examined on the morning of the 16th. All examinations will begin promptly at 9 a. m. each day. The entire board will meet December 17th to transact important business pertaining to the Board.

# Bubonic Plague at New Orleans.

Having been selected by the State Board of Health to visit and look into the Bubonic Plague situation at New Orleans, I did so, arriving there August 14th and staying ten days.

On arrival I put myself into communication with Colonel Rucker, Assistant Chief of the Public Health Service of the United States, who was in charge of the operations being carried out for the stamping out of the plague.

When it first became known that the Bubonic Plague was present in New Orleans the municipal authorities appealed to the State Board of Health of Louisiana for help, and they in turn, not being able to properly grapple with conditions, appealed to the United States Public Health Service, which promptly responded by sending Colonel Rucker and several other officers under him to take full charge of the situation, and they at once commenced a very active campaign which had for its object three things, i. e., the eradication of the plague, the lessening the chance of spreading it, and also the training of the public as to what to do in regard to keeping the plague from again breaking out.

When it is known that the rat is a carrier of the plague and that the flea from the affected rat is the medium of communication to the human, it can readily be seen that the total and complete extermination of the rat is of the most vital importance; hence, the first work done was to catch, destroy and examine all the rats in the city. A very active campaign was started, and a very thorough one, for not only the catching of the rat, but for the destroying of the breeding places and harborage of them, resulting in the catch by this date of something like 120,000 of them, of which only 190 were affected with the plague bacillus. I might say in this connection that the

rats caught are of four varieties, of which the Norwegian rat is greatly in excess. At one time the American rat in numbers predominated, but of late years it has to a great extent been driven out by the Norvegicus (Norwegian rat), so that now the American has in number to take second place.

The infected rat will live about ten days from the time it becomes infected, and during that time the fleas become infected and stay on the rat, but almost immediately after the death of the host they leave it and seek another habitat, another rat preferably, or failing that will seek to get on dog, cat, or other domestic animals, or the human being, but experience seems to point to their not leaving an animal while it is alive. The bedbug has been found to be infected with the Pestis Bacillus, but I am informed by the authorities that they have so far been unable to trace a single human case to its bite, and account for it by saying that in case of a rat an oedema of the glottis takes place, resulting in the regurgitation of some of the blood when it tries to swallow and that no oedema is found in the case of the bedbug.

In regard to the virulence of the various outbreaks of this disease, can say it greatly varies—some have been marked by a very high mortality, 90 per cent, and some by low, 30 per cent (Pestis Minor.)

The Bacillus Pestis was first discovered by Kitasato in 1894. It is a short aerobic, nonspore-forming organism with rounded ends, measuring from 1 to 1.8M by 0.4 to 0.7M, and quite a number I myself examined, especially from the guinea pig, I found bipolar.

In the early stages the bacilli are found in the buboes especially, but later on, the entire system is infected and they are found in blood and tissues all over the body. The spleen is very frequently an early effected organ, and in one case that I saw a post-mortem examination made of was enormously enlarged, and in this case the temperature had been very high just before death took place. One case that had recovered had shown a temperature of 108.4 degrees, the highest temperature that I had ever seen to recover.

In regard to symptoms, they vary greatly according to whether the case is one of any of five varieties, viz., Bubonic Plague, Pestis Minor, Septicaemic Plague, or pneumonic or intestinal form, but in the main the rapid onset, marked depression, high fever, and sometimes bloody vomiting are generally present;

in the severer forms the prostration is often very great, in a short time, and death results very quickly. In one case I saw, the patient was first seen at 3 p. m., diagnosis made by 3:30, was placed in the isolation hospital at 4:00, and although everything possible was done, including the administration of the anti-plague serum, death occurred at eight that same evening. Usually, in milder cases the fever may continue for seven or eight days and then gradually subside, although if pus makes its appearance in the buboes a slight rise will occur for a day or two after the first subsidence has taken place.

The treatment is largely symptomatic, excepting the use of the anti-plague serum—stimulants are indicated and a generous purgative is advisable in the beginning. All antiseptic precautions in the way of handling the patient's clothing and person must be strictly carried out and strict quarantine maintained. The treating of the buboes, unless pus makes its appearance, should merely consist of bathing in a bichloride solution several times a day, and when pus does show up and bypalpation is made out, it's a so far, undecided point as to whether to evacuate it surgically or leave it alone. Some of the men who have had large experience in treating this trouble in four different places, i. e., Hong Kong, San Francisco, Seattle and New Orleans, claim it is better not to open the buboe up.

The fumigation generally used is sulphur in large quantities in the presence of plenty of moisture, and for ships they rely on carbonmonoxid, generated from coke, huge quantities, 3,000 feet of gas per minute being forced into the holds of the ships and allowed to stay there one or two hours; afterwards this is forced out and pure air pumped into the spaces to take its place.

Concluding will say I want to thank Colonel Rucker and the officers under him for their many kindnesses and courtesies to me during my stay and for the painstaking care they took to show me how their campaign was being carried out.

G. O. CUPPAIDGE, M. D.,
Vice-President State Board of Health.

### Cancer.

The following leaflet is issued by the Portsmouth Health Committee, because so many persons die from Cancer whose lives could be saved if they acted upon the advice here offered.

The importance of this subject to the public is shown by the fact that of all persons over 45 years of age, one in ten dies from Cancer.

(Issued by the Health Department, Portsmouth.)

It is Vitally Important That the Following Facts About Cancer Should be Known.

It has been brought to the notice of the Health Committee that of the number of persons who die each year from Cancer many could have been cured if they had applied earlier for medical advice. On questioning patients as to why they did not apply to a doctor earlier, the reason almost invariably given is that as the early symptoms were unaccompanied by pain it was not thought that anything serious was the matter.

In order, therefore, to call the attention of the public to the significance of certain symptoms and conditions, and to the vital importance of acting promptly on the occurrence of these, it has been decided to make the following facts public.

The only cure for cancer at present known is its early and complete removal. Cancer, if removed early, has been proved conclusively to be a curable disease. If neglected and not removed in its earliest stages, it is practically invariably fatal. The paramount importance of its early recognition and early removal is therefore evident. For this purpose the assistance both of the public and of the medical profession is requisite, and a grave responsibility rests on both. It is only by their mutual co-operation that the ravages of this terrible disease can be lessened. The following information should be of vital assistance to the public. It is no exaggeration to say that, if acted upon, the result would be the saving annually of many hundreds of lives which at present are inevitably lost.

- 1. Cancer, in its early and curable stage, gives rise to no pain or symptom of ill health whatever.
- 2. Nevertheless, in its commonest situations, the signs of it in its early stage are conspicuously manifest. To witness:
  - 3. In case of any swelling occurring in the breast of a

woman after forty years of age, a medical man should at once be consulted. A large proportion of such swellings are Cancer.

- 4. Any bleeding, however trivial, occurring *after* the change of life means almost invariably Cancer, and Cancer which is then curable. If neglected till pain occurs, it means Cancer which is almost always incurable.
- 5. Any irregular bleeding occurring at the change of life should invariably be submitted to a doctor's investigation. It is not the natural method of the onset of the change of life, and in a large number of cases means commencing Cancer.
- 6. Any wart or sore occurring spontaneously on the lower lip in a man over forty-five years of age is almost certainly Cancer. If removed at once the cure is certain, if neglected the result is inevitably fatal.
- 7. Any sore or swelling occurring on the tongue or inside of the mouth of a man after forty-five years of age should be submitted to investigation without a moment's delay, and the decision at once arrived at by an expert microscopical examination as to whether it is Cancer or not. A very large proportion of such sores or swellings occurring at this time of life are Cancer, and if neglected for only a few weeks the result is almost inevitably fatal. If removed at once the prospect of cure is good.
- 8. Any bleeding occurring from the bowels after forty-five years of age, commonly supposed by the public to be "piles," should be submitted to investigation at once. A large proportion of such cases are Cancer, which at this stage is perfectly curable.
- 9. When warts, moles or other growths on the skin are exposed to constant irritation they should be immediately removed. A large number of them, if neglected, terminate in Cancer.
- 10. Avoid irritation of the tongue and cheeks by broken jagged teeth, and of the lower lip by clay pipes. Many of these irritations, if neglected, terminate in Cancer.
- 11. Although there is no evidence that Cancer is communicable under ordinary circumstances, it is desirable that rooms occupied by a person suffering from Cancer should be cleaned and disinfected from time to time.

A. MEARNS FRASER, M. D., Medical Officer of Health.

Health Department, Town Hall, Portsmouth,

January, 1914.

(Further copies of this notice may be obtained on application.)

## "Grave" Jokes.

There is a whole quart of truth in that old jingle about "A little nonsense now and then," etc. If it were not for this occasional nonsense the vital statistics recorder would have a dry time indeed. Here are samples of some of the things he finds on death certificates under the heading Cause of Death:

"Went to bed feeling well, but woke up dead."

"Died suddenly at the age of 103. To this time he bid fair to reach a ripe old age."

"Do not know cause of death, but patient fully recovered from last illness."

"Deceased had never been fatally sick."

A mother "died in infancy."

"Died suddenly, nothing serious."

"Pulmonary hemorrhage—sudden death. (Duration four years.)"

"Kick by horse shod on left kidney."

"Don't no. Died without the aid of a physician."

"Deceased died from blood poison caused by a broken ankle, which is remarkable, as his automobile struck him between the lamp and the radiator."

"Blow on head with ax. Contributory Cause—another man's wife."

"Cause of death: John Dice. Contributory: stopped-up gall duck."

## In Memoriam.

A little peach in the orchard grew—
A little peach of emerald hue;
Warmed by the sun and wet by the dew
It grew.

One day, passing that orchard through, That little peach dawned on the view Of Johnny Jones and his sister Sue— Them two.

Up at that peach a club they threw— Down from the stem on which it grew Fell the little peach of emerald hue— Mon dieu!

Sue took a bite and John a chew And then the trouble began to brew— Trouble the doctor couldn't subdue— Too true! Under the turf where the daisies grew They planted John and his sister Sue, And their little souls to the angels flew— Boohoo!

What of the peach of the emerald hue, Warmed by the sun and wet by the dew? Ah, well, it's mission on earth is through, Adieu!

-Eugene Field, in Kansas City Star.

# Rules for Avoiding Typhoid.

- (1) "Use only water that has been boiled or otherwise purified for drinking or culinary purposes.
  - (2) Drink only pasteurized milk.
- (3) Protect all food from flies and other insects by screening doors and windows.
- (4) See that all privies are fully protected from flies by screens.
- (5) Thoroughly wash in sterile water all fruits and vegetables eaten raw.
  - (6) Wash the hands, using nailbrush freely, before eating.
- (7) Before leaving home for vacation submit to typhoid inoculation."

# Antityphoid Vaccination.

W. H. Park, M. D., Consulting Bacteriologist State Department of Health, and Director Research Laboratories New York City Department of Health.

Immunization against typhoid fever, or the inoculation of a healthy person with sterilized typhoid cultures in order to prevent infection with typhoid fever, has passed beyond the experimental stage and has become established as a prophylactic measure of proved efficiency. It ranks second only to the Jennerian vaccination against smallpox in prophylactic efficiency.

The use of typhoid vaccine began in 1896, when Pfeiffer and Kolle injected two men with killed typhoid bacilli and showed that the same protective substance developed in their blood as in that of a person recovering from typhoid fever.

During the same year Wright inoculated two men and published the result of these injections. To him more than anyone is due the credit of placing typhoid vaccination on a practical basis. In 1898 he continued his work in India, where 4,000 men were inoculated. In 1900, with Leishmann, he super-

vised the inoculation of the troops engaged in the Boer war. Other nations have taken up the work, and under the supervision of Major Russell vaccination was started in the United States Army in 1909. The earlier experiences with vaccination were good, but subsequently much better results have been obtained with improved methods of preparing the vaccine, because, as pointed out by Leishmann, much of the early vaccine was overheated.

### THE VACCINE.

Since the introduction of this procedure the following preparations have been recommended:

- (1) Living bacilli.
- (2) Bacilli killed by heat.
- (3) Bacilli killed by chemicals.
- (4) Dead bacilli, sensitized (by antityphoid serum).
- (5) Living bacilli, sensitized (by antityphoid serum).

Although each may be good, and several have advantages which may warrant their general introduction, the method which has been most sidely used with the best results is the treatment with killed vaccine prepared according to the method used in the United States Army.

A laboratory culture of typhoid bacilli, which has lost much of its virulence through long artificial cultivation, is used. Large surfaces of agar in Blake bottles are inoculated from fresh agar cultures. After twenty-four hours' growth at 37 degrees C. the bacilli are washed from the surface of the agar with normal salt solution. The suspension is then standardized by counting the bacilli by the Wright method. This is done by mixing an equal part of blood with the bacterial suspension. Smears are made from this mixture and stained. The number of bacilli and red cells are then counted under the microscope in about twenty-five fields. When the proportion between the two has been determined, the number of red cells per c.c. being known, the number of bacilli per c.c. can be estimated; the suspension is then heated one hour at 56 degrees C., to kill the After heating, the sterility of the suspension is tested by inoculating generous amounts into media and incubating these under aerobic and anaerobic conditions. If no growth occurs the suspension is diluted with 0.25 per cent carbolic acid in normal saline solution so that one c.c. contains the appropriate dose. It is then bottled for distribution.

### DOSE AND METHOD OF DISTRIBUTION.

In the beginning a single inoculation was administered, but it was soon found that this gave insufficient protection. It is now agreed that the best results are obtained by three inoculations at intervals of from seven to ten days. The dose for the average adult is 500,000,000 bacilli for the first dose and 1,000,000,000 for the second and third doses. The dosage in children should be graded according to their body weight. A child of fifty pounds would require one-half that of an adult. For persons employed in business, successive Saturdays are convenient times for injection. If the injections are given about 4 p. m. the reaction will take place while the subject is in bed. The inoculation is made subcutaneously on the outer surface of the arm, at about the insertion of the deltoid muscle, after sterilizing the skin with tincture of iodine.

#### THE REACTION.

The probability of the occurrence of a reaction and its nature should be explained to the patient. The injection causes some pain which quickly subsides. After the lapse of several hours a local reaction may develop, consisting of a red, tender and oedematous area several inches in diameter. Sometimes the reaction is more extensive and severe. The lymph glands near the site of injection may become enlarged and tender and constitutional symptoms may develop. The latter consist in most cases of headache, malaise, and a rise in temperature. A severer reaction than this is met with in less than 1 per cent of those injected. In any event, neither the local nor general reactions should cause alarm, being of no importance except for the discomfort caused. The general reaction seldom lasts over twenty-four hours.

There is no direct relation between the degree of the reaction and the amount of immunity conferred. The frequency and severity of reaction is shown in the following table by Russell:

	Reaction absent.	Reaction mild.	Reaction moderate.	Reaction severe.
First doseSecond dose	71.3%	28.9% 25.7% 20.3%	2.4% 2.6% 1.5%	$0.3\% \\ 0.2\% \\ 0.1\%$

### THE SO-CALLED NEGATIVE PHASE.

The fear that the injection of typhoid vaccine will temporarily lower a person's resistance so that he will become more susceptible to infection is without foundation. As there is no way of determining whether a person is in the incubation stage, many persons with beginning typhoid have been vaccinated without ill results. A few cases have received a great deal of newspaper comment because of the somewhat sudden onset of the disease following an injection of vaccine. The most that can be said of such cases is that the injection was given too late to check the normal onset of the disease.

## THE RESULTS OF VACCINATION.

The history of typhoid fever in the United States Army is one of the best indices to the value of typhoid vaccination.

The following table is given by Russell:

Typhoid Fever, 1907-13—Whole American Army, Officers and Enlisted Men, American and Native Troops.

YEAR.	Mean strength.	Number of cases.	Rate per 1,000.	Number of deaths.	Rate per 1,000.	Cases among vaccinated.	
4. T.					ar green	Number.	Deaths.
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1907	62,523	237	3.79	19	.30		
1908	74,692	239	3.20	24	.31		
1909	84,077	282	3.35	22	.26	1	
1910	81,434	198	2.43	14	.17	7	
1911	82,802	70	.85	8	.10	11	1
1912	88,478	27	.31	4	.044	8	
1913	90,646	3	.03			1	
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Vaccination voluntary in 1909, 1910 and part of 1911; thereafter compulsory.

The incidence of typhoid among about 20,000 troops at the maneuvers in Texas, where two cases occurred during four months, is in sharp contrast with the experience of the troops encamped at Jacksonville, Fla., in 1898. In the later encampment there were 10,759 troops, among which there were 1,729 certain cases of typhoid and 248 deaths. The improvement in camp sanitation probably accounts for a great deal of this diminution, but not all. The soldiers in the Texas camps visited, ate and drank at Galveston and San Antonio, and in the former city

there were 192 cases, in the latter 49 cases of typhoid during the same period of time. The civil population in this way acts as a control. Furthermore, even with the best camp sanitation, there is little protection from contact infection from the carriers who must have been present among the 20,000 men.

In civil life, wherever vaccination has been employed the results have been excellent. Cullinan, for instance, vaccinated 500 persons in Richmond Asylum during an epidemic. Of the vaccinated only 1.36 per cent contracted typhoid, and most of these were in the incubation period at the time. Of the unvaccinated, 114 nurses, 14.9 per cent, contracted typhoid. Richardson and Spooner inoculated 100 nurses in the Massachusetts Hospital, and for the first year in the history of the institution there were no cases of typhoid among the nurses and attendants. Similar experiments have been reported from other hospitals where vaccination for nurses has been made compulsory. Its value to nurses and, therefore, to other exposed persons, was especially shown in the Stonington epidemic, where 48 out of 80 nurses were vaccinated and none developed typhoid, whereas 3 out of the 35 refusing vaccination developed typhoid.

The protection is not absolute. The New York City Department has record of three cases in which typhoid fever developed in persons who had been vaccinated more than ten days before and should, therefore, have been protected. These cases were exposed to particularly heavy infection, and if the same group of several thousand cases had been unvaccinated there would have been twenty times as many cases.

### DURATION OF IMMUNITY.

The experiences in this country are too recent to draw conclusions. Firth, from a wide experience in the Indian Army, concludes that immunity begins to diminish after two and one-half years. Even after four to five years, however, he finds that the rate among the inoculated is still only one-fourth of that among the unprotected troops.

### PERSONS WHO SHOULD BE IMMUNIZED.

Among the persons who may be designated as particularly to be benefited by immunization the following may be enumerated:

(a) Physicians, hospital internes, medical students, male and female nurses, and orderlies in hospitals.

- (b) Members of families among whom there are cases of typhoid or among whom typhoid carriers have been proved to exist, or those exposed to the disease or who expect to be brought in contact with it.
  - (c) Persons who expect to travel or settle in places which are habitual foci of typhoid fever.
    - (d) Those living in regions where typhoid is prevalent.
  - (e) Persons engaged in engineering or construction work necessitating living in camps.
  - (f) Vacationists, especially those visiting neighborhoods where the water and milk supply is not under competent sanitary control.
    - (g) The members of all military or naval organizations.—Health News, New York.

## The Service of Medicine to Civilization.

By Victor C. Vaughan, M. D., Ann Harbor, Mich., President American Medical Association.

In ancient times civilization was born, grew for a few generations and fell into decay. In all instances it was local and covered only small areas. Its habitations were oases in the world-wide desert of ignorance and superstition, and after an ephemeral existence all were buried in the sand. Relatively small bodies of men occupying salubrious regions developed the elements of science and for a few centuries flourished. Their superior knowledge gave them dominion over their less fortunate neighbors, who were converted into slaves. Conquest brought disease and the local civilizations were obliterated by contagion. History is replete with instances in which triumphant heroes have brought to their rejoicing countries with their prisoners of war invisible and intangible agents of death, which have ultimately vanquished the victors.

The Egyptians of the Pharaohs drained the lands, built aqueducts, disposed of their dead hygienically, reared temples and cities, maintained law and order, developed the elements of literature and science and devised and employed simple machinery. In speaking of the ancient Egyptians, Diodorus says: "The whole manner of life was so evenly ordered that it would appear as though it had been arranged by a learned physician, rather than by a lawgiver." Herodotus declared ancient Egypt the healthiest of countries, but filled with phy-

sicians of whom "one treats only the disease of the eye, another those of the head, the teeth, the abdomen or the internal organs." Writing of a later time, Gibbon said: "Ethiopia and Egypt have been stigmatized in all ages as the original source and seminary of the plague." It is evident that in the time of its great civilization Egypt was salubrious; coincident with the decline in the learning and wisdom of its people it was visited and desolated by pestilence. That Egypt had lost its salubrity as early as the period of the exodus of the Israelites is shown by many passages in the Bible in which the chosen people are threatened with the diseases of Egypt if they neglect or violate the laws. Moses, "learned in all the wisdom of the Egyptians," codified his sanitary rules and regulations in the form of religious rites and ceremonies and thus secured their observance among the faithful even down to the present time.

The Greek evolved the most glorious civilization of antiquity because he was the most ardent student of science, but he was unable to cope with malaria and bubonic plague, and his descendants have been in bondage to malaria for nearly twenty-four centuries. The medicine of Hippocrates, the wisdom of Socrates, the philosophy of Plato, the plays of Aristophanes, the laws of Pericles, and the science of Aristotle, could not save the Greek from the degrading effects of disease, and under its withering influence the civilization of this great people slowly but surely decayed. Its matchless marbles were thrown into the waste, its magnificent temples were allowed to crumble, its altars were deserted, its literature became insipid, its philosophy lost its virility, its science was forgotten, and the children of this blighted civilization were sold in the slave markets of Rome and in later generations paid tribute to the Slav and the Turk. There certainly were eminent Greek scientists and physicians for centuries after Hippocrates, but they were not products of Greek soil. They arose in Asia Minor, Egypt, Italy and elsewhere. It is of interest to note that malaria, according to Jones, was introduced into Greece in the fifth century B. C., and the fourth century showed the decline of Hippocratic medicine. Neuberger says: "The sons and grandsons of Hippocrates, as well as his immediate disciples, Appollonios and Dexippos, were at the head of that series of physicians who laid emphasis upon theoretical conjecture and gave to medicine in the fourth century B. C. its speculative coloring." Taken with the fact that other departments of learning showed

similar retrogression at the same time, this sequence between the introduction of malaria and the trend of medicine toward speculation is worthy of record. That pestilence aided the barbarians in the final desolation of Greece is indicated by the following quotation from Thumb:

At a time when the German tribes began moving, that is to say, at the end of the third century A. D., a gradual immigration of Slavonic tribes into the Balkans began; their invasions became more and more frequent, since the Goths chose Western Europe as the goal of their conquering expeditions and left to the Slavs an open passage into the Balkan countries. But a real Slavonization of some Greek territories took place only in the eighth century, and attained its highest point when a horrible plague in 746 depopulated the Greek territories.

The broken remnants of older civilizations found refuge and asylum in the salubrious climate of the Italian peninsula, and soon its hillsides were covered with vines and olives, while its plains and valleys bore abundant harvests. Rome was built and her empire promised to extend to the remotest parts of the world, but the ancient Roman contributed but little to science, and we are told by the historian that "a pestilence raged for fifteen years (251-265) and carried off one-half of the inhabitants of the empire." The seat of civilization was moved to the shore of the Bosphorus, but the lamp of science was well-nigh extinguished and the clouds of the middle ages enveloped the world and shrouded its inhabitants for more than a thousand years. "A fabulous and formless darkness overcame the fairest things of earth."

If one reads the history of the decline of the Roman empire, he can hardly fail to see that disease was an important factor in that retrograde movement which involved the greater part of the then known world. Jones and Ross find the earliest reference to malaria among the Romans in the comic poet Plautus, who died 184 B. C., and they quote Terence, who died 159 B. C., and whose language is explicit in showing, not only the prevalence of malaria, but also the recognition of the different forms. From that time on reference to the wide prevalence of malarial diseases, not only in the open country, but also in the city, is frequent and definite. Jones says:

There is, then, every reason for supposing that malaria was unknown in Italy in early times, was well known at the beginning of the second century B. C., and that it gradually became more common during the next two hundred years. If this be so it is at least a plausible conjecture that it was introduced by Hannibal's Carthaginian mercenaries. Africa seems to have been the original home of disease, and it is probable that some of his troops were infected. The constantly repeated devastation of Italy in the second Punic war would be sure to turn a large part of it into marshy land, thus

affording a convenient breeding place to the mosquitoes which were infected by the malarial patients among the Carthaginians. The similar condition of Attica during the closing years of the fifth century B. C. offers a striking parallel. This opinion does not rest on mere conjecture. We are told by Livy that in the year 208 B. C. a severe epidemic attacked Italy. It did not cause many deaths, but resulted in much lingering disease, that is, most probably, chronic malaria.

Malaria, however, was not the only disease which contributed to the degeneration of the Roman people. I have already referred to the pestilence of the third century, which is said to have destroyed half of the inhabitants of the vast empire within fifteen years. This certainly was not malaria. Moreover, this was not the first great pestilence which afflicted the Roman empire. Neuburger says:

The "plague," so called by Galen, was first introduced from Syria by the Roman army. \* \* \* The extraordinary contagiousness of the epidemic is emphasized in all contemporary reports. There appear to have been a variety of simultaneous manifestations, the descriptions indicating afflictions chiefly resembling smallpox or dysentery, but inadequate criteria on which to express an opinion are wanting. The "plague" commenced 165 A. D., claimed innumerable victims, and lasted at least fifteen years.

## Jerome observes of the Roman state:

With peace, order and good government a curious lethargy fell on the warrior state, deepening into a coma in which it dies so quietly that neither the contemporaries nor we moderns can fix the date of the decease. The fact, however, became apparent when the phenomena of decay were indubitable, and the world, deprived of the master, fell back helplessly into a condition hardly more advanced than in the ages before its subjection, save that it had the imperishable memory of Rome to give it hope, direction and courage.

In the fourth century the seat of government was removed to Byzantium. It is probable that this change was, in part at least, determined by the insalubrity of Italy. Early in the fifth century Rome was pillaged, but the real conquerors of Rome were not the Goths and Vandals, but malaria and the plague. Disease continued to devastate Italy. Creighton says:

About the year 668 the English archbishop elect, Vighard, having come to Rome to get his election confirmed by the Pope, Vitalanius, was soon after his arrival cut off by the pestilence with almost all who had gone with him. Twelve years after, in 680, there was another severe pestilence in the months of July, August and September, causing a great mortality at Rome and such a panic at Pavia that the inhabitants fled to the mountains. In 746 a pestilence is said to have advanced from Sicily and Calabria and to have made such devastation in Rome that there were houses without a single inhabitant left.

From that time on the plague periodically spread over Italy until the seventeenth century, while malaria has been in continuous possession down to our own time. We are told that the epidemic of 1348 reduced the inhabitants of the Eternal City to 20,000.

We are familiar with the graphic description of the plague in Florence by Boccaccio, who wrote:

Such was the cruelty of Heaven, and perhaps of men, that between March and July following, it is supposed, and made pretty certain, that upward of a hundred thousand souls perished in the city only; whereas, before that calamity, it was not supposed to have contained so many inhabitants. What magnificent dwellings, what noble palaces were then depopulated to the last person, what families extinct, what riches and vast possessions left, and no known heir to inherit, what numbers of both sexes in the prime and vigor of youth—whom in the morning neither Galen, Hippocrates, nor AEsculapius himself, but would have declared in perfect health—after dining heartily with their friends here, have supped with their departed friends in the other world.

There are but few passages in literature so tragic as the short record of the plague of the fourteenth century begun by the friar of Kilkenny, but soon interrupted by his death:

I, friar, John Clyn, of the order of Friars Minor and of the convent of Kilkenny, wrote in this book those notable things which happened in my times, which I saw with my eyes, or which I learned from persons worthy of credit. And lest these things worthy of remembrance should perish with time and fall away from the memory of those who are to come after us, I, seeing these many evils, and the whole world lying, as it were in the wicked one, among the dead, awaiting death—as I have truly heard and examined, so have I reduced these things to writing; and lest the writing should perish with the writer and the work fail altogether with the workman, I leave parchment for continuing the work if happily any man survive and any of the race of Adam escape this pestilence and continue the work I have begun.

That the period of the Byzantine Empire (395-1453) was one of general degeneracy is shown on every page of the historian. It produced no literature of merit, and "the study of Nature was regarded as the surest symptom of an unbelieving mind." Neuburger says:

The Byzantines merely followed the downward path. Surfeited with tradition, which made modes of thought appear inevitable because customary, filled as a nation with overweening self-conceit, fed by the glories of the Graeco-Roman past, they neither could nor would destroy the historic bridge nor replace the crumbling ruin with a new edifice. It lay outside the sphere of their interests to enter into that conscious emulation of antiquity which, emphasizing the growing contrast between past and present and eliminating the obsolete and the inert, is the essence of mental cultivation. Forgetting that it was the free development of the national spirit which constituted the greatness of the past, they went so far as to smother its liveliest expression by denying, in their rigid adherence to Attic speech, all parts of literature to the language of the people. The more incapable did the Byzantines become of grasping the spirit, the more tenaciously did they cling to the letter—a reflection of the mania for titles and ceremonies in political life—and thus they dragged the inanimate mechanism, the dry bones of antiquity through a thousand years, instead of erecting a new edifice on the foundations of antiquity.

The physician and historian, Precopius, in his account of the great pestilence in the reign of Justinian, "emulated the skill and diligence of Thucydides in the description of the plague at Athens." Of this epidemic Gibbon says:

In time its first malignancy was abated and dispersed; the disease alternately languished and revived; but it was not till the end of the calamitous period of fifty-two years that mankind recovered their health and the air resumed its pure and salubrious quality. No facts have been preserved to sustain an account, or even a conjecture, of the numbers that perished in this extraordinary mortality. I only find that during three months four, and at length ten thousand persons, died each day at Constantinople, that many cities in the east were left vacant, and that in several districts of Italy the harvest and the vintage withered on the ground. The triple scourge of war, pestilence and famine afflicted the subjects of Justinian, and his reign is disgraced by a visible decrease of the human species, which has never been replaced in some of the fairest countries of the globe.

This epidemic spread over the whole of Europe and it took more than a century to reach England, where "it fabled long after in prose and verse as the great plague of Cadwallader's time." Then for quite a thousand years it reaped its periodical harvests as often as immunity was lost in new generations.

The historian, as a rule, confines his descriptions to martial and political events, and consequently gives a wholly erroneous idea of true conditions. Gibbon says: "If a man were called upon to fix the period in the history of the world, during which the condition of the human race was most happy and prosperous, he would without hesitation name that which elapsed from the death of Domitian to the accession of Commodus" (from 96 to 180 A. D.). Noah Webster, in his work on epidemics and pestilence, quotes the preceding with the following just comment:

It is certain that at this time the Roman empire was in its glory, and governed by a series of able and virtuous princes who made the happiness of their subjects their principal object. But the coloring given to the happiness of this period is far too brilliant. The success of armies and the extent of empire do not constitute exclusively the happiness of nations; and no historian has a title to the character of fidelity who does not comprehend, in his general description of the state of mankind, moral and physical as well as political evils.

Let us make brief inquiry into the diseases of this "most happy and prosperous" period. It was preceded by, it began in, continued in and closed in pestilence. That the plague was endemic in Italy at that time and that it developed in epidemic form with each increase in susceptible material there can be no doubt. Of the epidemic of 68 A. D. Tacitus says:

Houses were filled with dead bodies and the streets with funerals; neither age nor sex was exempt; slaves and plebians were suddenly taken off, amidst the lamentations of their wives and children, who, while they assisted the sick and mourned the dead, were seized with the disease, and perishing, were burned on the same funeral pyre. To the knights and senators the disease was less mortal, though these also suffered in the common calamity.

About this time the plague appears to have spread over the whole of Asia, Northern Africa and Europe. According to Short, the deaths from this disease in Scotland between 88 and 92 A. D. amounted to not less than 150,000. This was probably not less than one-fourth, possibly one-half, the population of Scotland at that time.

In the year 80 A. D. the deaths from the plague in Rome at the height of the epidemic numbered 10,000 a day. It is estimated that the population of Rome at that time was somewhat more than one million. Exacerbations of the disease in Rome are recorded for the years 102, 107 and 117 A. D. According to Short, 45,000 died of the plague in Wales in 114 A. D. The year 167 A. D. is noted for an unusually severe outbreak of the plague at Rome, where it continued for many years. In the year 173 A. D. the Roman army was threatened with extinction by disease, and special epidemics, or rather exacerbations of the epidemic, prevailed in Rome in 175 and 178 A. D. That the "happy and prosperous" period was followed by a continuation of the plague is shown by the following quotation from Herodian:

A great pestilence raged throughout Italy at that time (about 187 A. D.), but with most violence in the city, by reason of the great concourse of people assembled from all parts of the earth. The mortality among men and cattle was great. The emperor, by advice of physicians, retired to Laurentium, on account of the coolness of the place, which was shaded with laurels. It was supposed that the fragrance of the laurels acted as an antidote against the contagion. The people in the city also, by the advice of physicians, filled their noses and ears with sweet ointments and used perfumes, etc.

Under the spell of the historian we have been inclined to regard the period when the greater philosopher, Marcus Aurelius Antoninus, sat on the throne of the world, as the golden age. Let us, therefore, listen to a few words from his personal attendant, courtier and historian, who writes:

Unless he, M. Antoninus, had been born at this juncture the affairs of the empire would have fallen into speedy ruin, for there was no respite from military operations. War raged in the east, in Illyricum, in Italy, and in Gaul. Earthquakes, with the destruction of cities, inundations of rivers, frequent plagues, a species of locusts ravaging the fields; in short, every calamity that can be conceived to afflict and torment man scourged the human race during his administration.

It is estimated that during the dark ages the average of human life was less than twenty years. A high birth-rate was necessary to keep the race alive, but notwithstanding this, Europe was sparsely inhabited. At the time of the Norman conquest the inhabitants of England numbered between two and two and one-half million, probably near the former, for they had not reached the greater number a hundred years later. Creighton says: "It would be within the mark to say that less than one-tenth of the population was urban in any distinctive sense of the term. After London, Norwick, York and Lincoln there were probably no towns with five thousand inhabitants." Indeed, urban life, as we now know it, was quite impossible in this age of pestilence and would soon become so again were the functions of preventive medicine relaxed.

Most of the great epidemics of the middle ages were designated as pestilentia or magna mortalitas. In the most deadly visitations, the bubonic plague is so accurately described that there can be no doubt about its identity, but it must not be supposed that the people enjoyed any high degree of health even in those periods when this contagion languished on account of exhaustion of susceptible victims. Ergotism, under the name of St. Anthony's fire, was endemic in France and adjacent territories; Normandy was filled with lepers, but Christ's poor were not coufined to that country. England was regarded as the special home of hunger, but abundance was a stranger to the masses in every land. The mysterious sweating sickness, apparently brought to England with Henry Tudor in 1485, developed in five distinct epidemics which were characterized by the fact that the mortality was greater among the rich than among the poor. Typhus, known as morbus pauperum, prevailed largely in the jails, on ships and among the squalid inhabitants of the cities. Even the discovery of America carried to Europe the scourge of syphilis, which was spread over Italy by the soldiers of Charles VIII, and within a few years reached the most distant parts of Europe. Smallpox appeared in England in the sixteenth century, having journeyed, according to the most reliable authority, all the way from the Orient. That tuberculosis, diphtheria, dysentery and other diseases still with us prevailed during the middle ages is shown by the records but they were overshadowed by the higher mortality of those mentioned above. Improved agriculture has extinguished the fire of St. Anthony, except in the most benighted provinces of Russia. The great fire in London in 1666 destroyed the infected rats and relieved England of the bubonic plague, which had been endemic in that country since 1349. Something more

than one hundred years later the discovery of Jenner robbed smallpox of its horrors, wherever vaccination is properly enforced. The investigations of Howard improved the sanitation of jails and workhouses and did much to eradicate typhus.

The middle ages were indeed dark physically, intellectually and morally. Here and there, now and then, some man of genius towered above the general low level of his contemporaries, and not infrequently he paid dearly for his audacity. For some centuries the Arab, especially in Spain, stood out alone as the torchbearer of science, and he, when driven back into the insalubrity of Northern Africa, lapsed into barbarism. Neuburger writes:

Fortunately, the fate of medieval medicine was not dependent on Byzantium alone. An admirable illustration of the doctrine of conservation of energy is afforded by the fact that, with the decline of intellectual energy at home, a contemporaneous development of Greek medicine took place abroad which, if at times misguided, was yet full of vitality, whilst the medical art of the newly arisen world of Islam reached a height unsurpassed during the middle ages.

In the greater part of Europe ignorance and disease held full sway. In the midst of great calamities "the will-o'-thewisp of superstition is an irresistible attraction and offers the only ray of hope." Strong men, neglectful of their earthly duties, betook themselves to secluded places and lost themselves in dreams of a heavenly paradise. Mysticism, fanaticism and superstition dominated all conditions of men. Rulers, illiterate. immoral, and even incestuous, occupied palaces while the masses died of starvation. The history of the time is a record of diseased. degenerated, demented men. There can be no doubt that disease has overthrown civilizations in the past, and there is no surety that it may not do so again. The recent outbreak of the plague in Manchuria and its more recent appearance in Cuba are not without their warnings. It remains to be seen if those who control our government have the intelligence necessary to protect our country against the invasion of pestilence. The failure to provide for camp sanitation in 1898, the behavior of California officials on the finding of plague in San Francisco, and the general indifference of national and state authorities toward the eradication of disease, discourage the hope that intelligent patriotism is widely distributed among us. As a contemporary of Mr. Dowie and Mrs. Eddy and as a citizen of a country in which the osteopath and chiropractic flourish, I feel some embarassment in speaking of the fanaticism and ignorance of the dark ages.

The history of medicine is that of mankind. Born in naked

ignorance, bound in the swaddling clothes of credulity and nursed on superstition, medicine has had its savants and its fakers, its triumphs and its failures, its honors and its disgraces. It has attracted and still attracts to its ranks men of the purest motives and those who are impelled by the basest desires. can be said without fear of contradiction that medicine has done more for the growth of science than any other profession, and its best representatives in all ages have been among the leaders in the advancement of knowledge, but the average medical man conforms in intellect and character to the community in which he lives. The food of the fakir is ignorance, and he thrives where this commodity is most abundant. The uncontrolled fool moves to his own destruction. This is the only way in which Nature can eliminate him. A wise government protects its incompetents from medical and other fakers, but such government can exist only where wisdom predominates.

A study of epidemics shows that in the presence of widespread contagion mankind in the mass tends to revert to the barbarous state. This is the unvarying testimony of all authorities, medical and lay, secular and religious, who have made the records. The historian Niebuhr, in discussing the report on the plague in Athens by Thucydides, says: "Almost all great epochs of moral degradation are connected with great epidemics." F. A. Gasquet, abbot president of the English Benedictines, in his history of the black death, writes: "The immediate effect on the people was religious paralysis. Instead of turning men to God the scourge turned them to despair, and this not only in England, but in all parts of Europe. Writers of every nation describe the same dissoluteness of manners consequent upon the epidemic." A Venetian historian notes the general dissoluteness which followed the disease and its effects in lowering the standard of probity and morals. Covino of Montpellier bears testimony to the baneful effects of the scourge on the morals of those who escaped, and concludes that such visitations exercise the most harmful influence on the general virtue of the world. William of Nangis, in his history of the plague in France in 1348, concludes with the following:

But alas! the world by this renovation is not changed for the better. For people were afterwards more avaricious and grasping, even when they possessed more of this world's goods than before. They were more covetous, vexing themselves by contradictions, quarrels, strifes and lawsuits.

Many similar references could be given, but these suffice to show that disease breeds ignorance, immorality and strife. Our inquiries into the influence of disease on civilization, however, have brought out the fact that people living in comparative health have within a few generations made beginnings, some, at least, highly creditable, in government, literature and science. The Hellenic tribes of Greece built up their wondrous civilization within a few centuries. It is true that Rome was not built in a day, but the seven hills were covered with houses and temples, the great aqueducts brought abundant supplies of pure water from the mountains, and the wonderful sewers remain as evidence of sanitary skill, and all this was accomplished in a relatively short period measured in the history of the race. The world moved forward at a rapid pace with the dawn of science in the last century. It is not extravagant to prophesy that with ten centuries of freedom from disease, both inherited and acquired, the world would be regenerated and the superman be born.

It is not necessary to turn to history for examples of the degrading effects of disease on man. We see it today in the physical inferiority, intellectual weakness and moral irresponsibility of those peoples who are still under the dominion of malaria and kindred diseases. My illustrious predecessor in this office, Doctor Gorgas, has demonstrated what scientific medicine may accomplish in those pestilential regions, and it is within reason to look forward to the time when the tropics may supply choice locations for civilized man. In like manner the valleys of the Tigris and Euphrates are being reclaimed and Babylon and Nineveh may again become seats of learning and culture. The modern sanitarian is quite competent to rebuild the home in which the cradle of civilization was rocked.

After the last epidemic of the plague in London, in 1665, the death rate, so far as it can be ascertained, fell to between seventy and eighty per one thousand. During the next century it fell as low as fifty, but fluctuated greatly with recurring epidemics of typhus and smallpox. In the nineteenth it gradually and quite constantly decreased and is now about fourteen. In 1879-80, the first year in which the mortality statistics of the United States possess sufficient accuracy to be of any value, the death rate in the registered area was 19.8; in 1912 it was 13.9—a decrease of thirty per cent. During the same time the mortality from typhoid fever has decreased fifty per cent; that from scarlet fever eighty-nine per cent; that from diphtheria eighty-four per cent; that from tuberculosis fifty-four per cent. Hoffman states that had the death rate for tuberculosis in 1901

continued there would have been 200,000 more deaths from this cause from that date to 1911 than actually did occur, or the actual saving of lives from death by tuberculosis accomplished in that decennium averaged 20,000 a year. A battle in which 20,000 are slain stirs the world at the time and fills pages of history later. Preventive medicine measures its successes by the number of lives saved, and 20,000 a year preserved from death from one disease is no small triumph. In the last century the average of human life has been increased fifteen years, and this increase could be duplicated in the next twenty years if the facts we now possess were effectively employed. Hoffman further states that the addition to the material wealth of this country secured by the reduction of deaths from tuberculosis within ten years amounts approximately to 6,200,000 years of human life, covering its most productive period. Medicine discovered the facts which have made this great work possible and has directed their application. With evidence of this kind before them, will our lawmakers listen to those who demand recognition as practitioners of medicine without proper qualification?

The further developments of medicine, both curative and preventive, depend on scientific investigations. The public is the beneficiary and should in every way encourage medical research. By the application of discoveries already made, the burden of disease has been lightened, sickness has become less frequent and less prolonged, a greater degree of health has been secured, the efficiency of the individual and of the nation has been increased, and life has been prolonged and made more enjoyable. The Federal Government and the states should sustain and promote scientific research. That government is the best which secures for its citizens the greatest freedom from disease, the highest degree of health and the longest life, and that people which most fully secures the enjoyment of these blessings will dominate the world.

Medicine consists of the application of scientific discovery to the prevention and cure of disease. All else which may go under the name of medicine is sham and fraud. Without advancement in the physical, chemical and biological sciences, there can be no progressive movement in medicine. Scientific knowledge is gained only by observation and experiment. Before the time of Jenner, we are told by the historian, it was unusual to meet in London one whose face was not marked by smallpox. There was a popular belief that one who had cowpox was immune to

smallpox. Jenner put this belief to a scientific test and the result was the discovery of vaccination, and this secured the abolition of this disfigurement and a marked reduction in mor-In 1849 a village doctor, with a crude microscope, studied the blood of animals sick with anthrax and compared it with that of healthy ones. He discovered the anthrax bacillus. The work was extended by Devaine, Pasteur, Koch and others, and from this the science of bacteriology has been developed. The particular causes of many infectious diseases have been recognized, isolated and their effects on animals demonstrated. Many of the mysteries of contagion have been revealed and the conditions of the transmission of the disease made known. The fundamental principles of preventive medicine have been developed into a science which is today the most potent factor in the progress of civilization. Finlay suspected a certain mosquito to be the carrier of the virus of yellow fever. and his coworkers demonstrated the truth of this theory, the work of Gorgas has freed Havana from the pestilence, and the construction of the Panama Canal is an accomplished fact.

We boast of a great civilization, but this is justified only Science more nearly dominates the world than at any time in the past. Learning permeates the masses more deeply, but credulity and ignorance are widely prevalent. this country of nearly one hundred millions there are thousands whose greed impedes the progress of the whole, tens of thousands whose ignorance retards their own growth, and other thousands who live by crime and procreate their kind to feed on generations to come. We have our schools, colleges and universities, while our almshouses, insane asylums and penal institutions are full. In our cities we see the palatial homes of the very rich, the splendid temples of trade and commerce, the slums of want and poverty, and the homes, both rich and squalid, of vice and crime. No nation in this condition can be given a clean bill of health. Our hilltops are illuminated by the light of knowledge, but our valleys are covered by the clouds of ignorance. We have not emerged from the shadows of the dark ages. The historian of the future will have no difficulty in convincing his readers that those who lived at the beginning of the twentieth century were but slightly removed from barbarism, as he will tell that the school, saloon and house of prostitution flourished in close proximity; that the capitalist worked his employees under conditions which precluded soundness of body; that the labor

union man dynamited buildings; that while we sent missionaries to convert the Moslem and the Buddhist, ten thousand murders were committed annually in the midst of us, and that a large percentage of our mortality was due to preventable disease.

Evidently there is much to be done before we pass out from the shadows of ignorance into the full light of knowledge. In this great work for the betterment of the race the medical profession has important duties to perform. I do not mean to imply that the uplift of mankind devolves wholly on the medical man. The burdens are too many and too diversified, the ascent is too steep and the pathways are too rough for one profession to hope to reach unaided the high plateau we seek. Moreover, other callings have no right and should have no desire to shirk the moral responsibilities which rest alike on all. But in past ages medical men have been the chief torchbearers of science, the only light in which man can safely walk, and we must keep and transmit to our ancestors this trust and honor. I know of no scientific discovery, from the ignition of wood by friction to the demonstration of the causes of infection and the restriction of disease, which has not sooner or later assisted in the betterment of the race. It may be added that nothing else has so aided man in his slow and halting progress from the pestilential marshes of ignorance to the open uplands of intelligence.

In so great a work as the eradication of preventable disease all intelligent people must co-operate. The law must support us by proper enactments, and these must be enforced with justice and intelligence; it must recognize that the right to enjoy health is quite as sacred as that to possess property; that to poison men in factories and mines, to pollute drinking water supplies, to adulterate foods and to drug with nostrums is manslaughter. Religion must teach the sanctity of the body as well as that of the soul, that ignorance is sin and knowledge virtue, that parenthood in the holiest function performed by man, and that to transmit disease is an unpardonable sin. The teacher must know hygiene as well as mathematics. The capitalists must recognize that improvement in health and growth in intelligence increase the efficiency of labor. There has never been a time when scientific medicine has had so many and such efficient and appreciative helpers as it has today. Our sanitary laws are for the most part good, but their administration is weak, on account of ignorance. The pulpits of the land are open for the most part to the sanitarian. The respectable newspapers are most effective in the crusade against quackery and disease. The philanthropist has learned that the advancement of science confers the greatest and most lasting benefits on man.

There is a moral obligation to be intelligent. Ignorance is a vice, and when it results in injury to any one it becomes a crime, a moral, if not a statutory one. To infect another with disease, either directly or indirectly, as a result of ignorance, is an immoral act. The purpose of government is to protect its citizens, and a government which fails to shelter its citizens against infection is neither intelligent nor moral. To transmit disease of body or mind to offspring is an unpardonable sin. In a reasonable sense it is worse than murder, because it projects suffering into the future indefinitely.

That medicine has become a fundamental social service must be evident. To return one incapacitated by illness or or injury to the condition of self-support benefits not only the individual, but the community, inasmuch as it increases its productive capacity. Infirmity is a direct burden on the individual and scarcely less direct on the community. Weakness in any part diminishes the strength of the whole. It is a fully established principle in social economy that widespread intelligence and growth in knowledge are beneficial to the state. It was in full recognition of this that the framers of the Ordinance of 1787 wrote into that immortal document: "Religion, morality and knowledge being necessary to good government and the happiness of mankind, schools and the means of education shall forever be encouraged." The Territory of the Northwest, the government of which was created in this ordinance, was at that time a vast waste of forests and prairies, furnishing a scant and precarious existence for savage tribes and attracting to its borders a few of the most hardy sons of civilization. The knowledge, for whose growth and diffusion the wise provision was made. has drained the malarial marshes, converted wild prairie and tangled wood into fruitful orchards and fertile fields, dotted the whole area with neat villages, reared great cities, linked all parts with steam and electric roads, and provided comfortable homes and abundant food for millions. The men who wrote the Ordinance of 1787 left a great inheritance which is temporarily in our possession. Let us write into this great document: "Every ill which can be relieved shall be removed, and every

preventable disease shall be prevented." The wisdom of our fathers has secured for us a greater measure of health and a longer term of life; let us do as well for those who are to possess this fair land in the next generation. Let us live not only for ourselves and the present, but for the greater and more intelligent life of the future.

Not myself, but the truth that in life I have spoken Not myself, but the seed that in life I have sown Shall pass into ages—all about me forgotten, Save the truth I have spoken, the things I have done.

Our present national health service is doing most excellent work. It demonstrated its strength in eradicating the plague in California and supppressing yellow fever in New Orleans. It has charge of the administration of the laws affecting the admission of immigrants, so far as their health is concerned, and it performs this service well. The Public Health Service is now investigating the pollution of certain rivers, studying trachoma in the mountains of Kentucky, pellagra in South Carolina and the spread of typhoid fever in certain districts. The Hygienic Laboratory at Washington has made valuable researches in addition to the routine work of the examinations of vaccines and serums. This bureau should be developed into a department with a member in the cabinet. The study of contagion is quite as important as anything within the range of the activities of the Departments of the Interior, Agriculture, and Commerce and Labor. Our health relations with other nations concern us quite as much as our trade relations. one thing above all others against which our doors should be shut is disease, whether it be of plant, animal or man, whether it be of body, mind or morals. The highest function of the state is not to make millionaires out of a few importers or to find profitable investments for its surplus wealth in foreign lands, but to advance to the highest degree the health, intelligence and morality of its citizens.

In each state there should be a hygienic laboratory equipped with able men supplied with facilities for the study of sanitary conditions and for the prosecution of scientific research. The Hygienic Laboratory at Washington should be developed into a great institution for research which would improve the conditions of life. The greatest asset of any nation is the health of its citizens, and the people who secure this in the highest degree will dominate the earth, for the dominion of the super-

man, when he comes, will extend from pole to pole, not by force of arms, but by example and education.

Younger members of the profession: One who is soon to be mustered out of service, on account of disability and old age, salutes you. An old soldier who has served in the ranks nearly forty years steps from his decimated regiment, lifts his cap and cheers you as you pass by in your new dress and armed with weapons of greater efficiency than was known when he enlisted. The cause is the liberation of the race from the bonds of superstition and ignorance, and it is a glorious one. The contest began before the genus homo sapiens came into existence. Countless generations have served their time, some well, some ill, and have passed into oblivion, but their partial victories have made you stronger and placed on you a greater responsibility. Your intelligence is greater, your judgment is sounder and your effectiveness has been increased. Where the past has failed or only partially succeeded, your success will be greater. But the battlements of ignorance still bristle with heavy fire guns. Only a few of the outposts of the enemy have been captured. It is for you to do, and then, like all your predecessors, to die. You stand today within the firing line. Go on courageously, and when eons of the future have become the past, the superman, born out of the struggles of his predecessors, will demolish the last citadel of ignorance and vice and firmly plant on the highest peak of the mountain of knowledge the flag of human progress. And when the silken banner shall unfold there shall appear on it this legend:

Pro gloria omnium nationum et hominum honore. (For the glory of all nations and honor of mankind.)

-Public Health, Michigan.

# How Shall We Abate Disease and Crime, Through Education?

By D. E. McClure, Assistant Secretary State Board of Health.

This is the theme of this number of Public Health which is devoted to education and is known as teachers' number. This does not mean that this issue of public health is for teachers only, but for everybody. It is the duty of the State Board of Health to have supervision of the sanitary conditions of the public schools of the state. That duty may best manifest itself in co-operation with our teachers, in co-operation with all citizens in the development and maintenance of a sanitary

public sentiment. There is much that we do not know and there is much that we do know. We know that all moral evil is the result of physical evil. We know that law is not a cure-all for disease and crime. Public opinion must always form in advance of the law. In the march of human progress the law does not lead the van. It is always in the rear. This we know. Sanitary public sentiment-making, then, we know is the human highway to a better and enduring humanity. There must be a love of law and a spirit of civic responsibility among the people or the whole contents of the statute book will be "as sounding brass or a tinkling cymbal." In a program incorporating the relation of disease to crime and an education for the abatement of disease. we need something better than a mass of theory and a modicum of fact. We need a well-thought-out program resting upon fact and a modicum of theory tested and sustained by the successful experience of history, and, then, our program for the lessening of crime by an abatement of disease through education will be followed.

## TWO GREAT ACHIEVEMENTS ACCOMPLISHED IN SANITATION.

At the close of the Spanish-American war the United States took charge of Cuba for a time. The mortality from yellow fever had been 428 annually to every 100,000 of the population in Havana. General Leonard Wood and Dr. Walter Reed took charge of the situation and yellow fever was stopped absolutely in 1902.

The malarial mosquito drove the French canal builders out of the Panama canal zone. Uncle Sam came into the zone, took up the work, cleaned up the malarial-breeding mosquito haunts, made the canal zone the most sanitary place on this side of the Atlantic. These two examples teach their own lessons, show sanitarians and educators what efficient, intelligent, persistent effort can accomplish. These two examples are guideboards on the highway to sanitation in an education of disease and crime prevention. Dr. Bernard Glueck says: "Our efforts must be directed in behalf of juvenile offenders; our studies, above all, must be concerned with the causes operative in the production of crime if we hope to lessen and abate it. If we can reasonably establish the cause or causes of juvenile delinquency we are on the right road to lessen and cure it." We must have a program in education as efficient as the program in sanitation in Cuba and the Panama canal zone whereby such marvelous results were obtained.

AN EDUCATION THAT MADE FOR STRONG CIVIC CITIZENS.

Patrick Henry very wisely said: "I have no way of judging the future but by the past; no lamp to guide my feet but the lamp of experience." Let us examine briefly an education that actually worked as a preventive of crime. When John Cabot Lodge made his study of distribution of ability in the United States he found that in ninety years five of the great western states had produced but twenty-seven persons who were mentioned in the American and English encyclopedias, while little Massachusetts alone had 2,686 authors, orators, philosophers and builders of states. The New England settlers landed in the forest and clustered their cabins around the building that was at once church, school, library and town hall. Rising early and sitting up late they plied their youth with ideas of liberty, civics and Christianity. The town hall was the social center of community life. The youth were taught to love the right and hate the wrong. "The sure foundations of states are laid in knowledge, not in ignorance. Let us prove this by history. Take the intellectual history of Northampton. During its history this town has sent out 114 lawyers, 112 ministers, 95 physicians, 100 educators, 7 college presidents, 30 professors, 24 editors, 6 historians, 14 authors, among whom were George Bancroft, John L. Motley, Professor Whitney, J. G. Holland; 38 officers of state, 28 officers of the United States, including members of the Senate and one president of the United States. This demonstrates that the early New England idea in education was correct. The fact that crime was practically unknown for many years in New England proves the efficiency and right trend of her education. Hawthorne gives us a picture illustrative of adultery that impresses its own Hester Prynne and her emblem, Rev. Dimmesdale and his guilty conscience slowly eating out his heart, make a picture in wrongdoing that Hawthorne has splendidly envisaged in the "Scarlet Letter." The New England early education prevented crime through the exaltation of social service and the principle of social center education. The ideal was the cause, a spendid civilization the effect.

"DISEASED SOCIAL CONDITIONS—THE CAUSE OF MOST CRIME."

This is the way the French School of Criminology states the question: If this is true, then, we should seek the remedy in better social conditions. There is no doubt that social and economic conditions are large breeders of crime. Our educational program, then, should be directed toward better social and economic conditions.

The social factors of crime, and for the purpose of this discussion more generally considered as pertinent in an application of educational abatement, are social, political, economic and moral. "Most obvious among crime-breeding political conditions is that state of political apathy or civic stagnation wherein multitudes of the better classes become neglectful of their civic obligations. When right-minded persons cease to exert their influence in the public life of community, the worst elements of citizenship rapidly gain control and the public offices are prostituted to the purposes of personal aggrandizement," says Mosby in "Cause and Cure of Crime."

The early New England communities were united in the work of civic and moral righteousness, as we have indicated previously in this discussion. It is true that these communities were not troubled with the complex social, economic and moral problems that disturb the twentieth century communities; but it is also true that the social-center method of the earlier communities, whereby civic and moral ideas were inculcated, has acquired and is acquiring a healthy and influential growth in our today of life. A great fallacy, however, still has deep root in community, state and national life, and this fallacy is that we can correct the wrongs of present day society by passing This idea is as old as organized government. The great Roman historian, Tacitus, pictures this condition when he says: "Corruption abounding in the commonwealth, the commonwealth abounding in laws." If history establishes one fact more strongly than another it is that where there is too much lawmaking there will also be much lawbreaking. The early New England settlements, as colonies and states, had few laws and less crime. It may be said, however, in passing that these states now have both laws and crime in abundance.

#### SOME CAUSES OF CRIME.

Let us state as a general truth that any influence which tends to destroy the physical and mental vigor, to shatter the nerves and weaken the will, lower a clean ideal of living is causation of crime. These leave their trail of blood behind; brain-fag, worry, despair, wreck of nerves, wreck of character and the wreck of conscience—the prison records tell the rest. Disease and crime are partners in our large centers of population, our villages, hamlets and rural communities. In our large centers of population the congested housing conditions create environments in which disease, vice and crime form a trinity of race decadence. Foul air, poor cooking, foul language, vice-suggesting reading matter and entertainments are the gloomy harpies of disease and crime. Low, suggestive fiction causes disease of the mind that leads to delinquency and crime. This evil cannot be too sharply antagonized in every department of community life. Vile reading matter makes bad citizens. The home and the school should unite in fighting this menace to civic growth. Vile, suggestive entertainments are a powerful causation of crime. In our social and industrial centers conditions prevail that nurture nervous degeneracy which lays a heavy toll on health and ends in crime.

In this nervous, lack-of-ideal life, where selfish gratification is the great incentive, health is wrecked and vice and crime go unrebuked. This condition makes its home in city, village, hamlet and country. It approaches the young man by sneering at manual labor, the young woman by disparaging domestic service. The age which shall restore the dignity of manual labor and domestic service will strike a deathblow at much disease and vice. The seeking some more "genteel" work is often the main traveled road to delinquency, vagabondage and crime. The insanitation of living beyond means is a fruitful causation of crime and its geography is state and nation-wide.

Judge Merritt W. Pinckney of the Cook County Juvenile Court, Illinois, in his report ending November 30, 1913, discusses juvenile delinquent and dependent children and the causation of crime in a most intelligent and impressive manner. A reading of this report is a revelation. It proves conclusively that the past practice of the courts has been and still is a large factor in the causation of crime, criminal making.

Judge Pinckney says: "The causes leading to dependent, delinquent children, the causation of crime, are much the same in all communities. The juveniles, whether truant, dependent or delinquent, are directly affected by the civic and social conditions of their environment.

Miss Mary M. Bartelme, who has charge of the delinquent girl cases in Judge Pinckney's court, says, in relation to delinquency among girls, "Lack of proper parental care is the most flagrant of all." Miss Bartelme further says: "Lack of proper

recreation causes the downfall of many girls, and can only be overcome when we give them rightly supervised dance halls, playgrounds, moving picture shows, theaters, school social centers. She also adds that "lack of employment for girls is causation of delinquency" which leads to crime.

Dr. William C. Healy, director of Juvenile Psychopathic Institute, working in connection with Cook County Juvenile Court, says: "Poor home conditions is often the direct cause of children's tendency to delinquency."

Hon. Archibald W. Frater, judge of the Juvenile Court, Seattle, Wash., in his report, "Why Children Go Wrong," says: "The one outstanding fact revealed by the study of the children who have appeared in the juvenile court during the last year (1913) is the *inefficiency of parents*. Eighty-five per cent of these children were apprehended for conduct and conditions of neglect which, in most instances, would have been avoided if fathers and mothers had safeguarded the children with a reasonable amount of affectionate companionship."

Dr. Tilburn Merrill, director of diagnosis, Juvenile Court, Seattle, Wash., in his social pathology chart, shows that out of 421 cases of juvenile delinquency 93 were due to *unwholesome* companionship, 113 to home neglect.

Sergi says: "Up to the present the school has debated the best way to teach the alphabet, how it is possible to learn to write soonest and what is the best method of developing the intelligence; but it does not teach us any method of directing our feelings and impulses."

Another writer says: "Education for the sake of living is not developed in our schools, and, because of this, our education, if not a causation of disease and crime, is surely not a prevention."

Judge Ben B. Lindsay of Colorado says that "A change in our educational system, whereby our boys would be fitted more directly for industrial efficiency, would do more to reduce crime in this country than all the juvenile courts we could establish."

John J. Fallen of the Blackwell Island penitentiary says: "The statement that the lack of a trade is a potent and a permanent cause of crime is borne out by statistics and close observations of penologists." Mosby, in "Cause and Cure of Crime," says: "The child-idler is simply the adult-idler in the making, and in about seventy-five per cent of the cases the adult-idler is the criminal." Idleness is a disease that fosters

delinquency and crime. Dean Holmes cites numerous cases where investigation showed that delinquency was the result of disease in early life, scarlet fever and diphtheria having left their mark on the mentality of the sufferers from these diseases.

From the foregoing, the prime factors in the causation of crime, the relation of disease, mental, moral and physical, are clearly seen to be social, environmental, home, school and municipal. Let us next consider

SOME OF THE STRONGEST FACTORS IN AN EDUCATION FOR THE ABATEMENT AND CURE OF DISEASE AND CRIME.

The suppression of crime is not at all a legal question. It is rather a problem of physicians, economists, parents and Home-makers, teachers, sanitarians in all walks of life must combine in the work of developing and maintaining of a public sentiment that shall abate and cure disease and crime. The mother must be more interested in rearing civically, morally and physically strong boys and girls than in fashion or whist: the father, more interested in his home than in his lodge, club, equally as interested in his boys and girls as in his business, whether that business is farming, teaching, merchant, doctor, editor, clergyman, worker in factory, or whatever it may "What is that which should be done for the child that shall make it possible for him to develop into a useful and respected citizen?" In the large centers of population, at least in some of them, this question is being answered by juvenile courts, detention homes, probation officers, good environments for delinquent boys and girls to which reference has been made in "Some Causes of Crime." The instrumentalities to which we have referred proceed upon the wise principle that the state is the ultimate parent of all children, that a weak family is a weakness of the state. In dealing with disease and crime, preventive and curative measures now go hand in hand. The juvenile courts, the probation officers, the work of the detention homes are mighty factors in the prevention and cure of crime.

Keeping the stigma of arrest off delinquent boys and girls prevents criminals and cures crime. These delinquents are more often an effect of parental cause. Why punish the effect? The Cook County Juvenile Court practices sympathy and consideration in dealing with delinquents. No arrests are made. The delinquent is brought before a sympathetic human judge and he talks the matter over with this magistrate, who sends him

to the detention home, the Juvenile Psychopathic Institute, puts him on probation, or finds him a good home. This is prevention of criminal making, cure of crime. The practice of this court in the reformation of delinquent girls is sublime. "In so far as it is possible to do so, the darkened page in the girls' lives is guarded from the public gaze. A woman judge, a woman stenographer, a woman probation officer and the mother of the delinquent girl are an ideal group before whom the wayward girl may unburden her soul and look for sympathetic aid and justice," says Judge Pinckney. Miss Mary M. Bartelme hears the cases against delinquent girls, and she and Judge Pinckney are annually preventing hundreds of delinquents from becoming criminals. In view of the great work being done to prevent crime, cure delinquency, we are led to believe Charlotte Perkins Gilman's statement, "The world's last prison will be a hospital."

THE HOME AND THE SCHOOL, THE GREATEST PREVENTION OF DISEASE AND CRIME.

The juvenile courts are doing much, but in the last analysis we must look to the home and school to prevent disease and crime. Neither of these great factors are doing anywhere near what they must do if the ravages of disease are prevented, the march of crime halted. Let us come from the abstract to Take the example of the social-center town the concrete. hall, church and schools of New England, where disease and crime were hardly known. It won't do to point the finger at New England of today. If she has receded from her commanding position as citizen maker, it is due to the fact that degenerate parents have multiplied more rapidly than normal ones. Coming closer home, consider Hillsdale city and county, which, through education and civic living, has the lowest disease and crime record of any corresponding unit of population in Michigan. This county organized a civic health movement last March that is an example which may be followed by other counties in the state in the prevention of disease and delinquency; likewise, Jackson county is another example of sanitary organization.

#### THE BOYNE CITY IDEA.

Prof. L. A. Butler, superintendent of Boyne City schools, and Dr. W. H. Marshall, health officer, have formed a copartnership in sanitation and education. Mr. Butler has one of the best-equipped girls' domestic economy and boys' industrial

schools in the state. But he does not stop at these essentials on the highway to citizenship. His boys have taken every vacant lot, piece of land to cultivate; and an instructor from the Michigan Agricultural College remains with the boys all summer. The Butler and Marshall Company, unlimited, have taken in the mothers' clubs as copartners. No purely "genteel" employment for the Boyne City boys and girls. The clean-up week was inaugurated by a union meeting at the opera house Sunday, May 3d. The city band, High School Glee Club, addresses and recitations entertained a packed house. Boyne City Chamber of Commerce meets at the schoolhouse. which is the social center of the city. This is an education "for the sake of living," high ideals, good books, work of hand and brain, sanitary teaching by doing, clean entertainment, is the Boyne City idea of an education that prevents crime and disease. If it is true, as the French school of criminology teaches, "that most crime arises from diseased social conditions," we must remedy our social conditions. Every school should be made a social center, and this means every rural school. Personally. we believe the solution of rural school education lies in a township central school of ten or twelve grades, with a social-center audience room. Denmark has 120 such schools, and the lowest per cent of illiteracy of any foreign nation, lowest per cent of crime. These schools afford clean entertainment for the country folk. It is said that where such schools have been instituted, bawdy drawings upon school buildings have disappeared. These drawings are certainly in evidence in country schools in Michigan and illustrate the thought in the minds of too many rural pupils, and they are not entire strangers in village and city school buildings. The social evil is at the root of most crime and disease, and the vulgar environments of a majority of rural schools, and too many village and city schools, make them recruiting stations of disease and crime. To prevent crime and disease we must eliminate poor ventilation, bawdy drawings and writings, vile, suggestive reading in our schools. We must make the school a social center. There should be a fathers' mothers', patrons' and pupils' club in every school division The mother spirit should be developed in our in Michigan. teachers. Many pupils are driven from school and into delinquency by narrow, petty tyrant teachers. The passing mark does not alone indicate a teacher. There is something about the true teacher that cannot be catalogued. The unaffectionate nature of some teachers makes school a prison from which pupils evince good sense in remaining away. The parents, teachers and environments are a pupil's makers. In their hands is beauty or deformity, life or death.

#### SEX EDUCATION.

Sex education is a prevention of disease and crime. It must not be relegated to schools and teachers. The home is the place to teach sex hygiene and the father and mother should be the teachers. Home is the place to best impress the lesson. There are certain features of sex education that must be veiled in the privacy of the home, in modesty, approached only by fathers and mothers, and which the bold, curious glare of the public should not desecrate. The law of suggestion in sex education is pernicious if used promiscuously in school sex education. In a moral, civic, sanitary education the home must co-operate with the school. The school must do some things the home cannot do, the home some things the school cannot do, should not do, to maintain modesty and chastity. We must not make a mistake here, a mistake that all the coming years may gloom In this paper we have attempted with shame and sorrow. to point out the relation of disease to crime and hinted at a program for their abatement through education.

-Public Health, Michigan.

#### REPORT OF THE STATE BACTERIOLOGIST.

Summary of examinations made in the laboratory during the third quarter of 1914:

	Tuberculosis (sputum)	Typhoid	Diphtheria	Malaria	Water	Gonococci infection	Rabies	Tuberculosis (not sputum)	Miscellaneous.	Total
July	155	129	15	22	70	15	2	5	10	423
August	209	233	7	18	76	10	2	8	17	580
September	159	166	33	12	40	21	1	2	21	455
Totals	523	528	55	52	186	46	5	15	48	
Grand total					/				374	1,458
Tuboraulosis sputum	non 001	at posit	Irro							31.9
Tuberculosis sputum Typhoid, per cent po										34.5
Diphtheria, per cent										52.7
Water, per cent posi	tive									51.6

## Preparation of Specimens for Sending to the Laboratory.

Sputum.—Regulation sputum outfits may be obtained by addressing the State Bacteriologist, Jefferson City, Mo. Full directions accompany each outfit. Physicians are urged to use this means of sending specimens to the laboratory.

Blood.—It is impossible to examine a single specimen of blood for both typhoid and malaria. For the Widal test for typhoid the blood is best obtained by pricking the lobe of the ear with a flat or three-cornered needle, or the point of a knife. The ear should first be rubbed with cotton and alcohol, then dried, and the needle should be sterile. Two or three good-sized drops should be collected on filter paper provided by the laboratory for this purpose.

For Malaria the blood is obtained in the same way, but must be spread in a thin even smear on a glass microscope slide. This is done as follows: A small drop of blood is received onto the slide near one end by touching the slide to the blood as it hangs from the lobe of the ear. This slide is then laid on a firm, flat surface, and the end of a second slide, held at an angle of about thirty degrees with the first slide and touching it, is brought into contact with the drop of blood. In two or three seconds the blood will have run across the slide at the point of contact. Then the second slide is pushed along on the first with a moderate speed, so as to leave a thin, even smear on the surface of the first slide. A second smear may be made in a similar manner on the other slide. Caution: Have slides perfectly clean, handle only by the edges and work rapidly. Allow them to dry in the air without heat.

Blood should never be placed between slides and sent to the laboratory.

Swabs for Diphtheria.—The regulation tube and mailing case, to be obtained from the county health officer or from the State Bacteriologist, should be used for this purpose. Full directions accompany each outfit.

Water.—Specimens of water are examined for their potability, chiefly determined by the absence or presence of colon bacilli, and index of sewage pollution.

For a total bacterial count it is imperative that all samples be iced from the time of taking until they reach the laboratory. For this purpose special containers may be obtained from the laboratory, express charges to be paid both ways by sender of specimens.

Pus.—Pus, to be examined for gonoccocci, should be sent on a slide prepared as follows: A small amount—much less than a drop—should be mixed on the slide with a small drop of water and thinly spread over an area a half inch or more in diameter, and allowed to dry. Do not press slides together.

Rabies.—Unless the animal shows-symptoms of rabies, it should not be killed, but should be held for observation, in which event, if positive, death will ensue in a very few days, in ample time to begin treatment of patient. Do not kill the animal by a blow or shot in the head, as this may make a proper examination impossible. The head only of the animal should be sent, and that at the earliest possible moment. The head is to be placed in a tin bucket with a tightly fitting cover, which bucket is to be placed in a larger wooden or iron bucket and surrounded by sawdust and iced. The heads of animals freshly killed may be sprinkled with salt, packed in wet sawdust in a strong wooden box and expressed.

*Urine*.—Specimens of urine are examined for tubercle bacilli in suspected cases of genito-urinary tuberculosis.

In sending specimens to be examined for tubercle bacilli, the following points should be carefully noted and such information should accompany specimens:

- 1. The specimen should be obtained by catheter, and drawn directly into a sterile bottle.
- 2. It should be stated upon the card accompanying the specimen that it was obtained by catheter.
- 3. Two or four ounces of urine should be sent and a preservative should be used.

Feces.—Feces will be examined for tubercle bacilli and for the ova of intestinal parasites (hookworm.)

#### VITAL STATISTICS.

Summary Showing Comparison of Important Causes of Deaths and Registration of Births during July, August and September, 1914.

Statistics compiled for the third quarter of 1914, July, August and September, show there was a total of 9,144 deaths, Of this number 5,211 were males, 3,933 females, 8,259 white, 885 black. The month of July showed the greatest number of deaths, 3,431, and September the lowest, 2,800. For the same quarter in 1913 there were 10,183 deaths, or 1,039 more than in 1914. This is a noticeable improvement in the health conditions of the State compared with one year ago.

"Diseases of the heart and circulatory system" heads the list of cause of deaths for the quarter with 837, while during the same period in 1913 there were 1,108 fatalities from these diseases, or a decrease in 1914 of 271.

There were 836 deaths from Diarrhoea and Enteritis (under two years of age), or a decrease of 164 compared with the third quarter of 1913.

Acute Nephritis and Bright's Disease caused 752 deaths for the three months, or 104 more than in 1913. Disease of the Nervous System shows 648, Tuberculosis shows 740, Cancer 575, Accidents 490, Pneumonia 393, Typhoid Fever 245, Respiratory System 186, Suicides 178, Diabetes 96, Homicides 91, Puerperal State 84, Diphtheria and Croup 79, Whooping Cough 51, Scarlet Fever 25, Epidemic Cerebrospinal Meningitis 8, Influenza 7, Measles 7, Acute Poliomyelitis 2.

There were 18,426 births reported as having occurred during July, August and September, of which 9,593 were males, 8,833 females, 17,824 white, 602 black.

It will be noted from the foregoing that there were 9,282 more births than deaths during the quarter.

C. J. KAISER, Chief Statistician.

## TABLE SHOWING BIRTHS FILED WITH THE CENTRAL BUREAU OF VITAL STATISTICS DURING MONTHS OF JULY, AUGUST AND SEPTEMBER, 1914.

#### BY SEX AND COLOR (STILLBIRTHS EXCLUDED).

	Ma	ale.	Fem	ıale.
Month. Total.	White.	Black.	White.	Black.
	1 1 1		1. 1 01	1.7.
July	3,098	117	2,857	90
August	3,092	93	2,877	90
September	3,082	111	2,818	101
Totals	9,272	321	8,552	281
Totals by sex	9,	593	8,	833

# TABLE SHOWING DEATHS FROM TWENTY-FOUR IMPORTANT CAUSES' FILED WITH CENTRAL BUREAU OF VITAL STATISTICS DURING JULY, AUGUST AND SEPTEMBER, 1914 (STILLBIRTHS EXCLUDED).

Cause.	July.	August.	Sept.	Totals.
	, ,		,	
Typhoid Fever	76	84	85	245
Smallpox		7		1 1 1
Measles	3	4	1 1 1 1 1 1 1 1 1	1 1
Scarlet Fever.	8	11	6	25
Whooping Cough	24	21	6	51
Diphtheria and Croup	10	24	45	79
Influenza	3	4	<	1 1 1
Tuberculosis of Lungs	313	30	276	619
Other forms of Tuberculosis	53	45	23	121
Cancer	200	192	183	578
Diabetes	41	29	26	96
Epidemic Cerebrospinal Meningitis	4	1	4	1/1/1/8
Acute Anterior Poliomyelitis	1	1		2
Other Diseases of the Nervous System	252	227	205	684
Diseases of Heart and Circulatory System	293	296	248	837
Pneumonia and Broncho-pneumonia	153	133	107	393
Other Diseases of Respiratory System	58	58	70	186
Diarrhoea and Enteritis (under 2 years of age)	319	278	239	836
Acute Nephritis and Bright's Disease	260	247	245	752
The Puerperal state	30	26	28	84
Accidents	174	190	126	490
Suicides	58	54	66	178
Homicides	32	36	23	91
Other causes	1,066	923	789	2,778
Totals	3,431	2,913	2,800	9,144

#### DEATHS IN MISSOURI FROM SEVEN IMPORTANT EPIDEMIC DISEASES, RATE PER 100,000 POPULATION, FOR THE MONTHS OF JULY, AUGUST AND SEPTEMBER, 1914.

Diseases.		Months.	
	July.	August.	September.
Typhoid Fever	76	84	85
Measles	3	4	
Scarlet Fever	8	11	
Whooping Cough	24	21	$\epsilon$
Diphtheria and Croup	10	24	45
Epidemic Meningitis	4		4
Acute Poliomyelitis	1	1	
Totals	126	145	146

## Births and Deaths Reported in Missouri (Stillbirths Not Included) During the Quarter Ending September 30, 1914.

- 3				1								3.4															-
	Pop	Tota	Total quart										Imp	orta	nt ca	uses	of de	ath.									
Counties.	Population, 1910	Total births during the quarter	al deaths during the	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tubercu- losis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	nervous system	Diseases of heart and circulatory system	Pneumonia, Broncho- pneumonia	Other diseases of respiratory system	Diarrhoea and Enteritis (under 2 years of age).	A c u t e Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
Adair— July August September		40 39 36	15 18 18		<i>Y</i>						$1 \\ 2 \\ 2$		2 1 2				$\begin{bmatrix} 2 \\ \cdots \\ 2 \end{bmatrix}$	1 1 2	i		3 1	1 1 1	1 1	1 1		:::	6 8 7
Totals		115	51																								
Andrew— July		18 18 31	16 9 11							1 	2 2		1 i				1	2 1 1		i	 2 1	4 i					5 4 6
Totals		67	36																								
Atchison— July August September		23 17 24	4 4 3							:::												1 1 1		i			2 2 2
Totals		64	11																								
Audrain— July		37 25 30	13 18 14	1			-			· i	$egin{array}{c} === \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $			···i			3 2	1 1 1	i	i	1 1			1			6 7 7
Totals		92	45	· · · ·											75												
				-						===				-													

Barry— July	23,869	37 19 33	26 20 27	7							]		1 1 1					4				3 1 1 1		2		11 8 7
Totals		89	73																	 						
Barton— July	16,747	32 20 26	10 12 13								1 i		1	 i 1		::::	i	<sub>i</sub>					1 1 1			5 7 5
Totals	,	78	35		×															 						
Bates— July August September		58 34 37	28 34 18	4							1 1 1 1	i	2 1 2	1			2 3 1	7 2 2	 j			3 1 2			i	7 12 7
Totals		129	80																	 						
Benton— July August. September.		20 26 24	. 5 8 12	1					···i				 1				1 2	i	· · · · · · · · · · · · · · · · · · ·			i				2 5 5
Totals		70	25																	 						
Bollinger July August. September.		30 25 12	11 4 7	1		∵i	:::				1 <sub>2</sub>											i	2 i			5 i
Totals		67	22																	 						
Boone— July August September		49 63 68	34 54 18	3				3		i	2 3 1		3				4 5 2	4 6 1	3	l 6		2 2	2 2		 3	8 19 6
Totals		180	106		- 5.													.47.		 						
Buchanan— July	15,517	25 27 30	10										``i	··i			1 2	5 2				2		··i		3 1 3
Totals		82	22																	 						
	7 1 7 7				J===		=			==	==		=	=	-	==	J <del></del>			 	<b> </b>	=			,== :	_

BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING SEPTEMBER 30, 1914—Continued.

	Pop	Tot	Total quar										In	por	tant	cause	es of	death	•								
Counties.	Population, 1910	Total births during the quarter.	al deaths during the	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tubercu- losis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	Other diseases of the nervous system	Diseases of heart and circulatory system	Pneumonia, Broncho- pneumonia	Other diseases of respiratory system	Diarrhœa and Enteritis (under 2 years of age).	A c u t e Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
St. Joseph— July August September		126 115 125	85 100 80	1		: :: : : : :			· · · i		8 6 7		4 8 11	2  1			12 14 15	4 10 13	6	1 1 2	6	8	 i	4 5 2	2	i	23 26 15
Totals		366	265				1																				
Butler— July		31 32 71	27 8 20						 i		3	2	1 	1			i	 1 1		···i	8 2 2	1 i		1 1	 i	:::	9 2 9
Totals	2	134	55																								
Caldwell— July		32 23 24	18 12 11								$egin{pmatrix} \dots & 1 \ 2 \end{matrix}$	 i	$egin{array}{c} 2 \ 1 \ \dots \end{array}$				4 1 3				1 4	2					4 2 3
Totals		79	41																							·	
Callaway— July		43 26 44	35 33 21						 i		4 5 3	2	1 1	 ::i			961	5	1 1 1		2	3		4	1 i		8 12 5
Totals		113	89																			1					

Camden— July August September Totals		9 25 18 52	3 8 3		• • •	 		-				2		 		 		-					<b>.</b>	i 		2 5 
Cape Girardeau— July August September.	27,621	56 65 64	22 22 21				1			]	1	1 1			,	2 2 2 2	1 3	2	]	2	]	.1	1		 i	6 10 5
Totals		185	65			 							·													
Carroll— July		32 38 49	19 25 12						:::			2				1	2 4 1	1			4	3 1 1	1 1	1 i		8 6 6
Totals		119	56			 											,									
Carter— July August September		10 10 10											:::			i	1						i 		:::	4 3
Totals	77	30	11			 																				
Cass— July		27 42 51	20 11 14								. 1					1 2 2				. 1	1 5	l 2 3	2 1			7 5 2
Totals		120	45			 		, .																		
Cedar— July August September		33 36 24	14	::::							l l	1	1			1 1 1				. 3						7 5 6
Totals		93	38			 									٠.,.					1.0						
Chariton— July		36 68 39									i	2				3 2 1	5				2	2	2			8 5 4
Totals		143	54			 									,				١,							
					-	,		1		,		-,	1	1	1	1	,	-	(	-)	-		]			1.

BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING SEPTEMBER 30, 1914—Continued.

	1 10 -50	and a	44-34					- 00	-			· · · · · · · · · · · · · · · · · · ·					366	8									
	Pop	Tot	Total									1	mpc	rtai	nt car	ises (	of dea	th.									
Counties.	Population, 1910	Total births during the quarter	al deaths during the	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tubercu- losis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	Other diseases of the nervous system	Diseases of heart and circulatory system	Pneumonia, Broncho- pneumonia	Other diseases of respiratory system	Diarrhœa and Enteritis (under 2 years of age).	A c u t e Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
Christian— July		43 26 40	13 9 3					 			1 2 1	1 1	21				i				1	2	2	1 1		:::	2 3 1
Totals		109	25																								
Clark— July August. September.		16 14 13	5 8 4									i		∵ i			 1 1				1 1	1		 7. :	1 1		2 2 3
Totals		43	17																				. : .				
Clay— July August September		25 27 28	25 22 19						,		2 2 1	j	1 1	1 1 2		::::	5 1 1	4	1		1 1 1	27	2	2 i	i	  i	4 5 5
Totals		80	66																			,					
Clinton— July		29 32 26	16								2	]	2 1 1	2			1		5 3		i	j	i	i		:::	7 4 4
Totals		87	33																								

	10 107	-		77							,	,			17						1	r	1			
August		11 19 19	4 5 5				~ :	:::					····i		: : : : : : : :		 1 1	1			i		  :::		:::	1 3 1
Totals		49	14					,																		 
Jefferson City— July		23 30 20	12 14 8				::::		:::	:::		1			::::			1 1 1	i	<sub>j</sub>	i	2	2	· i	:::	 4 4 3
Totals		73	34																							 
Cooper— July August September		26 27 35		 <sub>2</sub>					:::		2		2 1 1				4	2 3 1		2			2	 <sub>i</sub>	 i	 2 5 6
Totals		88	45															. ,								 • • • •
Crawford— July		21 29 29	11	::::				i		:::			1	:::			<sub>i</sub>	i	1 2 1	<sub>j</sub>	1				:::	4 1 3
Totals		79	30								. ,															 
Dade— July		31 30 29	12 12 8	1								i	3					i			3			···i		 7 3 2
Totals		90	32							٠.,								,								 
Dallas— July		31 48 13	11				:::												1 4 1	j	i		1			 1 5 1
Totals		92	19																							 
Daviess— July August. September.		51 22 34	16 8 17					 									$\frac{2}{1}$	 1 1	3		1 3	1		3		 6 2 1
Totals	:	107	31																							 
		11/1		,	1	1	1		,	,		1				,	12	2		-		,	'		,	1 15

500

Other causes.....

1000

997

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QUARTER ENDING SEPTEMBER THE MISSOURI (STILLBIRTHS NOT INCLUDED) DURING 30, 1914—Continued. BIRTHS AND DEATHS REPORTED IN

: : : Homicides..... Suicides..... FRR Accidents..... : : The puerperal state.... .01 Acute Nephritis and Bright's Disease..... 111 .01 Diarrhœa and Enteritis (under 2 years of age). : . H & Other diseases of respira-: tory system..... SHS Pneumonia, Broncho-: pneumonia...... death. : Diseases of heart and circulatory system.... 20 Other diseases of the of nervous system . . . . . Important causes Acute Anterior Poliomyelitis..... Epidemic Cerebrospinal Meningitis..... : Diabetes..... Cancer..... } : : : Other forms of Tuberculosis..... : Tuberculosis of the lungs..... Influenza..... . . : : .01 Diphtheria and Croup... : Whooping Cough..... Scarlet Fever..... Measles..... : Smallpox..... Typhoid Fever..... 004 23 Total deaths during the quarter..... 813 113 122 71 225 25  $\frac{20}{28}$ 71 Total births during the quarter..... 30,328 13,245 16,664 12,531....... Population, 1910..... July. August.... July August.... September... July.....
August....
September.. July....August....September. Totals... Totals.. Totals. Dunklin-

Franklin— July August. September.	 61 45 50	32 27 24	1	 			j		 i	2 i	1 1 1	$\begin{array}{c} 2 \\ 1 \\ \ldots \end{array}$	 		 4 2	2 3		3	i	 2 <b>4</b>	2	2	5 1 1 3		9 9 7
Totals	 156	83	`,	 					 				 										 		,
Gasconade July August. September.	 35 27 18	11 11 6									i		 		2		- 1			 2 1			L L 		5 1 2
Totals	 80	28		 					 		٠.		 				٠						 		
Gentry— July	 26 32 29	16		 		,			1		1		 		 i 1	1				i			 i i		2 8 4
Totals	 87	37		 				i.,	 				 				9.						 		
Greene— July	 36 43 51	12 9 9	1						1	1 .	i		 			<u>1</u>		1		···i					4 6 3
Totals	 130	30		 					 				 										 		
Springfield— July	 98 65 61	66 47 51	4	 		1 .	1 j		$\frac{3}{2} \dots$	2	3 3 1	1 1 1	 		2 4 6	2 2 2		2	1 1	3 7 4	3		2 1 1	1 i	33 15 17
Totals	 224	164	· · · ·	 					 				 		. , .								 	,	
Grundy— July	 33 37 38	16 17 17							$egin{array}{cccccccccccccccccccccccccccccccccccc$		2		 		1 1 1 1	2 2 1		i		1 1			 1		5 7 10
Totals	 108	50		 					 				 										 		r.;;
Harrison— July	 44 30 43	15 9 14							 i		i 1		 	.	2 2	i		2	3	3		3		···i	4 3 4
Totals	 117	38		 					 				 						• •				 		
					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			Your Your									100								

BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING SEPTEMBER 30, 1914—Continued.

	Counties.	July August September	Totals	Hckory— July August. September.	Totals	July August September	Totals	Howard— July August	Totals
Pop	ulation, 1910	27,242		8,741		14,539		15,653	
Tota	al births during the	44 54 39	137	15 12 12	46	27 24 45	96	17 16 26	59
	al deaths during the	28 15 14	57	549	15	8 111 10	29	10 17 16	43
	Typhoid Fever	: :							
	Smallpox		:				:	:::	
	Measles	:::	:			:::	:		:
	Scarlet Fever		:						
	Whooping Cough				:		:		
	Diphtheria and Croup	: :H	:	::H			:		
	Influenza	- 7 15	:   :	- 10.	:	15 2.		:::	
	Tuberculosis of the lungs	64 : :	:	1		::-		H4H	
	Other forms of Tubercu- losis					1	9		
In	Cancer	:==		9	·	.14		121	
por	Diabetes	83 ::							
tant	Epidemic Cerebrospinal Meningitis		:		2				
canse	Acute Anterior Poliomy- elitis		:						
Important causes of death.	Other diseases of the nervous system	8-6	:						
leath	Diseases of heart and circulatory system	601				<b>"</b> :::		T : T	
	Pneumonia, Broncho- pneumonia			1 2 2 3		1 :::			
	Other diseases of respiratory system		:						
	Diarrhœa and Enteritis (under 2 years of age).			1		2		.21	
	Acute Nephritis and Bright's Disease	6011		1 :::		1:1	:	122	
	The puerperal state	· · · · · ·	:					: ; ;	
	Accidents		:	, ::	:	1 :		211	
	Suicides	:::	:						
	Homicides		:		:		:		
	Other causes	127	:	121		47 :	:	460	

Howell	41 33 30	$\begin{array}{c} 11 \\ 12 \\ 7 \end{array}$	2 2							1		1				i	2		1 1 1	1 1	1	1 i			3 6 2
Totals	104	30												 											
Iron         8,563           July         August           September	16 17 13	9				: : :			:::						1 1		i i		2 1 2			1 1		i	3 7
Totals	46	28						,						 											
Jackson 35,141 July August. September.	68 90 93	41 38 38		*						6 7 1		1 3 2 2			5 1 4	3	1 1	1 1	2 1 3	4		3		∵i	11 9 9
Totals	251	117												 											*71
Kansas City— 248,381 July August September	469 487 423	353 346 274	3 11 3			2	1 1 1			30 19 25		5 22 5 27 8 21	7		22 25 14	37	17 16 15	12	32	28 32 25	7 4 7	20 19 8	7	10 10 6	92 79 75
Totals	1,379	973												 											
Jasper— 45,783 July August September	64 67 74	44 40 27	 1 3	7.5	1			 i				3		 1	$\begin{array}{c} 4\\1\\2\end{array}$			2 2 2 2	7 6	4 2 1		2 3 2	1	:::	13 14 10
Totals	205	111												 									·		
Joplin 32,073 July 32,073 August September 32,073	33 71 47		1							7 5 3				 	2 3 2	1 2 4	1 1 1		4 4 6	2 1		2 4 6	3		13 10 8
Totals	151	106									6			 											
Webb City— 11,817 July August September	22 14 20	17 15 7					:::											<sub>i</sub>	2 2 2 1			3 1 1		i	4 3 3
Totals	56	39												 								<u></u>	<u></u>		

BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING SEPTEMBER 30, 1914—Continued.

			-	4-				11 -			1.8		1					2.10	111		011			1		1	2
	Pop	Tot	Tot										Ir	npoi	rtant	cause	es of	death	1.								
Counties.	Population, 1910	Total births during the quarter	Total deaths during the quarter	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the	Other forms of Tubercu- losis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	Other diseases of the nervous system	Diseases of heart and circulatory system	Pneumonia. Broncho- pneumonia	Other diseases of respiratory system	Diarrhœa and Enteritis (under 2 years of age).	Acute Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
Jefferson— July August September		48 48 36	28 22 11	2					· · i		5 4 1		1 				2 1 1	3	21	j	63	2 1 1		3	 i		9
Totals		132	71																								
Johnson— July		47 47 44	21 23 19				1				2 1 4		3 2 4	 i			3	4 3	<sub>1</sub>		2 2	2 2 2 1		 i			10
Totals		138	63				٠.,																		:		
Knox— July August September		16 17 3	6 11 5	i							2 1	::::	···i				1	2 2 1		i		2					2 5 1
Totals		36	22						1.		·																
Laclede July		32 25 21	13 8 37	 i				··i			 2 2	::::		7			1 1 1	2	···i	2	1 1	2		32	: : :		4 2
Totals		78	58																	;				200		77.	

)		C	
	i	ì	
ı	•	ì	

Lafayette— July	 56 65 35	2	3			1				1 1	2			 44	6							2 2 1	10 6 10
Totals	 156	74	1		 									 									 
Lawrence July August September	 51 60 65		)	$ \begin{array}{c} 2 \\ 2 \\ 3 \\  \end{array} $				) // 						 1 2 1	4				3	i		. 1 i i	14 11 6
Totals	 176	7	٠		 									 	.,.				·				 
Lewis— July	 13 13 19	1	2							3				. i		· · · i		]		1			 4 3 2
Totals	 45	27	7		 									 									 
Lincoln— July August September	 48 36 38	18					2		2	2 1	2			 i						i 2	1		2 2 5
Totals	 122	36	3											 , ,			374						 
Linn— July August September	 50 39 51	23 14 16	l	i										 4 2 3	1 i	i				2 3		2	 14 6 3
Totals	 140	58	3								, : .	. ) .		 									 
Livingston— July August September	 29 25 51	11 17 13	7	2							i	 i		 21	3					i ::		2	3 6 3
Totals	 105	41			 														17.				 
McDonald— July	 11 6 8		 															2					2
Totals	 25	(	.,		 						. A.		1,	 		.,.,		1					 

BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING SEPTEMBER 30, 1914—Continued.

	Pop	Tota	Tota										In	npo	rtant	caus	es of	deat	h.								
Counties.	Population, 1910	Total births during the quarter	Total deaths during the quarter	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tuberculosis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis.	Other diseases of the nervous system	Diseases of heart and circulatory system	Pneumonia. Broncho- pneumonia	Other diseases of respiratory system	Diarrhœa and Enteritis (under 2 years of age).	A c u t e Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
Macon— July August September.		57 51 54	$\begin{array}{c} 21 \\ 16 \\ 22 \end{array}$	i							2 2 1	i	$\begin{bmatrix} \dots \\ \frac{2}{2} \end{bmatrix}$				3 2 1	1 1 2	1		1	1 1 4		1 1 1 1			1
Totals		162	59																								
Madison— July August September		19 28 27	10 13 12	2				-1			2 2 2 2		 1 1					1		· · · i	1 2 2 2	1 1		· i			
Totals	.,	74	35																								
Maries— July		19 24 21	5								<sub>1</sub>		3					· · · · · · · · · · · · · · · · · · ·	. 1			1	1				
Totals		64	25												× ×							, , , ,					
Marion— July August September		14 15 25	9								1		1 2 2				1			i i		1 1		···i			
Totals		54	25		7.,																						

Hannibal— July August September Totals		38 27 34 99		::::		i	3 2		 5 7 1			5 SF		3 1 1		 		• • • •		1 1	1		14 5 4
Mercer— July August September		19 19 25		···i		 :::			4 	1		:::	 ····i	i			1	2		···i			3 1 2
Totals  Miller— July August September	16,717	24 37 34	19 8 7 8	2				  i		1				 i	 3		·····i		1 				2 1 4
Totals  Mississippi— July August September	14,557	95 36 43 25	12 8 12						  				 				3	1		···· i		···i	6 3 3
Totals  Moniteau— July August	14,375	104 27 26 34	18				1		1		2			2	1	 	1	100		1 			10 1
September Totals		87	-			 					 		 			 			···	:			····
Monroe— July		22 18 26	16 13 14				:::		 				 	$\begin{array}{c} 1 \\ 2 \\ 4 \end{array}$	1	 	3 1	 2 3	 i 1	i			$\begin{array}{c} 6 \\ 1 \\ 2 \\ \end{array}$
Montgomery— July	15,604	30 24	10 11					:::			2			1 1	1 3	 		····· ···· 1			· · · ·		6 3
September Totals		77	_		-	 				-	1		 	1		 	_	····		3	· · · · · · · · · · · · · · · · · · ·		6 

## BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING SEPTEMBER 30, 1914—Continued.

	and the same of the	100	Marie S	-	17		· F	50	, 13		Con	omuc	ч.	1	100	1				L.	17.0	4		1.		_	1
	Pop	Tot	Tot										Iı	mpo	rtant	caus	es of	deat	h.		5						
Counties.	Population, 1910	Total births during the quarter	Total deaths during the quarter	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tuberculosis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	Other diseases of the nervous system	Diseases of heart and circulatory system	Pneumonia. Broncho- pneumonia	ses of resp	Diarrhœa and Enteritis (under 2 years of age).	A c u t e Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
Morgan— July. August. September.		23 19 26	12 8 5						···i		1 2				****			2	2	i	1 1	2	2		····i		6 3 3
Totals		68	25																,								
New Madrid— July		49 49 58	12				 	i	 1		4		i					1		1 1 1		5 1 1	1	 i			19 3 3
Totals		156	53							.,.							·										
Newton— July		48 46 36	59	]							5 4 2		1 2				31111	2 2	2	i	1 2 1 1	2 l	2	38 1	3		11 8 3
Totals		130	97						15,7		3								1.41						,,		
Nodaway— July		50 36 53	20			). 					]						2 2	2 2	1	i i i	i å	1 5	1 5 1		i i		4 4 5
Totals		139	56	3											1.							1					

Oregon— July	 15 32 20		1							i		1	 i			 2	<sub>i</sub>	i		1 2 1		1				3 3 3
Totals	 67	28																	7					v.*.	2	
Osage July August. September.	 43 34 32	11 8 9	1					<sub>i</sub>		i		1				i i		<sub>i</sub>								6 1 5
Totals	 109	28																								
Ozark— July August. September.	 23 32 41	6 5 3						:::		1										1		i				1 3 1
Totals	 96	14			. ! .																					
Pemiscot— July	 32 50 71	36 20 21	2 2	2			1	··· i		3	3	 i		 i	0 0 0 0	2	1	2	i	5 5 3		i	4 			16 8 9
Totals	 153	77		2."					1																7	
Perry— July	 22 26 19	22 4 12									3	1				1 i			i	2		i				8 2 3
Totals	 67	48														: . X.										
Pettis— July	 21 19 14	7 4 7						i					:::			1			i		1	1 · · · · · · · · · · · · · · · · · · ·				3 3 1
Totals	 54	18								8	1								ć							
Sedalia— July	 29 40 28	28 20 22	J	l						12	2 1 2	1				5 1						1 1 1			i	11 10 9
Totals	 97	70			1500	1										1							177	1.		

BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING SEPTEMBER 30, 1914—Continued.

	Pop	Tot	Total quar		2		î .						Im	por	tant	cause	s of o	leath						12-			
Counties.	Population, 1910	Total births during the quarter	al deaths during the	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tubercu- losis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	Other diseases of the nervous system	Diseases of heart and circulatory system	Pneumonia, Broncho- pneumonia	Other diseases of respiratory system	Diarrhœa and Enteritis (under 2 years of age).	A c u t e Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
Phelps— July August September		24 21 27	15 20 12			1	1	1 i			<sub>i</sub>		  i				1 2	i 1 1	1 2	1	4 4 1	5 2 2		 1 1			1 7 4
Totals		72	47			٠						,.,.			7.,.												
Pike— July August September		41 45 57	19 29 9								3 4 1	2 1	1 1	1	:		1 3	1 1 1	1	1	3			1 2 1	···i	``i	6 9 6
Totals		143	57			e,	٠.,				»."						··· .			<i>:</i>							
Platte— July		16 25 39	8 11 11	$\frac{1}{2}$					:::	<i>y</i>	<sub>1</sub>	<sub>i</sub>	1 3	:::			1 1 1	i			···i	i		2		:::	$\begin{array}{c} 4 \\ 3 \\ 1 \end{array}$
Totals		80	30																								
Polk— July		36 40 43	16 20 10	1							1 1 2		1 1 1				1 1 1				1	1 3	··i	 i 1	1 :::		8 11 2
Totals	,	119	46			1.																					

Pulaski— July August September	 23 19 21	9 12 9		i			:::		:::	1	::::	1	:::				i	3		2	2 1		1 1			3 4 3
Totals	 63	30								• • • •																
Putnam— July August. September.	 26 13 18	8	• • • •			**. 				2 2 1						-	1	1		1	1	1	1			6 3 3
Totals	 57						• • •																			
Ralls— July	 12 17 18	10							i i	:::: i	1		···i			1				i						2 3 3
Totals	 47	21									7.7															
Randolph— July August September	 24 31 39	19					1 :::	:::		1 1 2		1				2 1	3	2		1 2 1	J	· · · · · · · · · · · · · · · · · · ·	2	i	i i	4 3 5
Totals	 94	48																								
Moberly— July	19 18 12	21								1 2 2	::::	3					2	1		i		···i				4 12 9
Totals	 49	49								٠.,				, .												
Ray— July	 39 29 50	21 21 22		i : : :						1 1 2							1 i	1	1	2	1	2	i	1 1	2	10 8 13
Totals	 118	64																								
Reynolds— July August September	 40 27 32	8 5 4		1																1						5 5 3
Totals	99	17			1000	1 30	400		4.30			A. L			7 9		. 6						7			

Homicides.  Suicides.  Accidents.  The puerperal state.  Ac u te Nephritis and Bright's Disease.  Diarrhoa and Entertitis (under 2 years of age)  Other diseases of respiratory system.  Pneumonia. Bronchopneumonia.  Diseases of heart and circulatory system.  Other diseases of the nervous system.  Other diseases of the nervous system.  Acute Anterior Poliomy elitis.  Epidemic Cerebrospinal Meningitis.  Diabetes.  Cancer.  Other forms of Tuberculosis of the lungs.  Influenza.  Diphtheria and Croup.  Whooping Cough.  Scarlet Fever.  Measles.  Smallpox.  Typhoid Fever.  Total deaths during the quarter.  Total births during the quarter.	Pop	Ounties.	Ripley— 13,099 July August. September	Totals	St. Charles— 24,695 July August. September.	Totals	St. Clair— 16,412 July August. September	Totals	St. Francois— 35,738 July August.
Homicides Suicides.  Accidents				. 110		. 109		66 .	
Homicides.  Suicides.  Accidents.  Accidents.  The puerperal state.  A c u te Nephritis and Bright's Disease.  Diarrhœa and Enteritis (under 2 years of age).  Other diseases of respiratory system.  Pneumonia. B r o n c h opneumonia.  Diseases of heart and circulatory system.  Other diseases of the nervous system.  Other diseases of the nervous system.  Could be diseases of the nervous system.  Other forms of Tuberculosis.  Influenza.  Diphtheria and Croup.  Whooping Cough.  Scarlet Fever.  Measles.  Smallpox.  Typhoid Fever.			14 10 15	39	25 19 31	75	13 15 6	34	53
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Totals		83	19							V.	4).		14		A.												

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July.
August..... August.....September.... July..... August.... September... Totals.... Counties. Totals... July..... August..... September.. Totals. Sullivan-

BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING SEPTEMBER

Taney— July	::::::::::::::::::::::::::::::::::::::	23 31 16		1	-						]			-	1						-		 i	1 1 		3 5 1
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Totals		148	32			- 1																	 			
Vernon— July		32 42 36	38 23 22	2				1			4		2				10	2 2 2 2		1 2	1 1 3	1	 2 1 1			9 8 5
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Totals		36	23																				 			
Washington— July		29 28 30	13 5 13	1					10.1					. N	::::		····i	3	::::		1	_				6 3 3
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Totals		87	33																				 			
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Totals		125	32				.X.	.ni.						<u> </u>								,	 			

BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING SEPTEMBER 30, 1914—Continued.

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	Pop				Important causes of death.																						
Counties.	Population, 1910	Total births during the quarter.	Total deaths during the quarter	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tuberculosis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	Other diseases of the nervous system	Diseases of heart and circulatory system	Pneumonia. Broncho- pneumonia	Other diseases of respiratory system	Diarrhœa and Enteritis (under 2 years of age).	A c u t e Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
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Wright— July August. September.		30 34 27																			<sub>1</sub>	1 1	i				3 3 3
Totals		91	. 29																		<u></u>						
St. Louis city— July August September		1,449 1,347 1,297	876 808 763	12	3		7	1 3 1	7 17 20		69	12	67 59 68	10 5 5			63 56 53	90	56	16	77 59 69	88 79 88	1	47 41 12	25	18	187
Totals		4,093	2,447															٠,			,			7.5	. ч.		
Totals for State— July August September.		6,162 6,152 6,112	3,431 2,913 2,800	76 84 85	3	3 4	8 11 6	24 21	24	3	30	45	200 192 183	29		1	252 227 205	296	133	58	319 278 239	247	26	174 190 126	54	36	1066 923 789
Grand totals		18,426	9,144	245	5	7	25	51	79	7	619	121	575	96	8	3 2	684	837	393	186	836	752	84	490	178	91	2778

## **MISSOURI**

# STATE BOARD OF HEALTH



# QUARTERLY BULLETIN

#### **NEW SERIES**

VOL. 4

Published at Jefferson City

OCTOBER-DECEMBER, 1914

No. 4

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## BULLETIN OF THE

# Missouri State Board of Health

NEW SERIES.

VOL. 4

OCTOBER-DECEMBER 1914

NO. 4

## DOCTORS, LOCAL REGISTRARS AND UNDER-TAKERS.

The physicians throughout the state are, or should be, familiar with all of the details in making out birth and death certificates. The Vital Statistics Law has been in operation in this state the past five years. I do not believe there is a young doctor in the state who is not doing this work well. Some of the older physicians neglect, and sometimes refuse, to comply with the law in sending to the local registrar their certificates properly signed. We have been compelled to make some prosecutions on this account and each time, the parties have been fined, after which there has been no more trouble.

A doctor is a health officer in reality. He is licensed by the state as such and given a special privilege which is of great value to him. In return the state expects and demands of him that the certificates of all births, attended by him, be sent to his local registrar within ten days after birth of the child; also that he must properly fill in the medical certificate of death in death certificates, so the undertaker may be able to present the death certificate properly made out to the local registrar, who upon receipt of same shall issue a burial permit. Local registrars should see that all certificates of death are properly filled in with all the information indicated in the blank spaces before issuing a burial permit. If for any reason the doctor or informant does not know the cause of death, or other information, it is satisfactory to write "Do not know" or "Unknown."

When certificates are not properly made out before they are sent in to this, the Central Bureau, they must be returned

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(3)

for correction, which causes a great deal of confusion and delay in the Central Office and also makes more trouble for the local registrar and informant.

Undertakers as a rule do their part well and in a creditable way without complaint. I have had no complaint that any one of them is practicing medicine upon his undertaker's license, as I have been informed some barbers are doing. They know at least as much, and have as much legal right to do so, as the barbers have, but they have too much sense and respect for the law to undertake it. They are good fellows.

Let us all try to make this a banner year for prompt, accurate work.

## Hygiene in Old Age.

We never have an effect without a cause, but with all the scientific achievements of the ages, there still remains many observable results, the cause of which have never been successfully demonstrated.

Our knowledge of the nature of gravitation is no further advanced than it was ages ago, and no immediate progress is in sight.

As with gravitation we see unmistakable evidence of old age, but when we attempt to penetrate the depths anatomically, histologically, experimentally and clinically to demonstrate the cause of senility, and to formulate a medicinal or hygienic treatment that would forever perpetuate life, we undertake that which is beyond the power of the most gigantic intellect of the present age. Notwithstanding, investigation along this line continues, and has continued from the 8th century when the Egyptian alchemists were in search of the philosopher's stone, lapis philosophorum, which was to possess the power of removing all seeds of disease out of the human body and renewing life.

In our own day and time we have the investigations of Dr. Sajous, a physician and scientist, supporting the idea that the diminution of metabolism i. e., of the assimilation and conversion of food into energy, is in all probability due to the alteration of the glands with internal secretion, especially the thyroid, testicles, ovaries, adrenals and the pituitary glands.

While these theories may seem to the practical mind as being worthless, and hardly worth considering, it can not be successfully denied that many valuable discoveries have originated from such scientific investigation that have proven of great value to medical science. If Dr. Sajous is correct in

theory, it would naturally follow that to defer old age and preserve the vigor of life could be accomplished, in addition to correct hygienic measures, by the administration of extracts from corresponding organs of healthy animals in order that the deficiency of function of the organs which may have become changed by age or disease, might be supplied. The beneficial effect in the administration of thyroid extract to cretins seems to furnish some support to the theory. If the reader will pardon this digression we will not take any more time with reference to this line of thought.

It is indeed strange that men and women by a little negligence in hygiene allow themselves to fall a victim to old age at 40 and perhaps die at the age of 60, when they have the power to prolong a good vigorous manhood or womanhood to the age of 60, and life to perhaps 100 and enjoy life twice as much by being free from pain and disease. It would seem that the opinion of what constitutes the pleasures of life has something to do with it, as we had an illustration of this a few days ago, when a young man suffering from an acute indigestion came for professional advice. On inquiry it was found he had been indulging quite freely in alcoholics. On being advised not to do such things, he replied by saying, "If a man must deny himself all the pleasures of life, in order to have health, he just as well die and be done with it." Now, what do you think of that?

As long as we have people who hold to such views, as to what constitutes the pleasures of life, we may expect disease, old age, and death at a period when such people, by a proper attention to hygiene, should be enjoying a full measure of manhood and womanhood. The only thing a physician can do in such cases is to make out his prescription as best he can, let it be medicinal or hygienic, and leave it to the decision of the patient as to whether he takes it or not.

To avoid early decay we would do well to give attention to the following:

- (1) Live in the open air and sunshine as much as possible, take plenty of exercise and take care to breathe deeply and regularly.
- (2) Eat moderately, and live on a diet consisting mainly of: Meat (moderate quantity), white or brown bread, eggs, cereals, vegetables, fruits, fresh butter, milk from healthy cows in liberal quantity. Meals should be regular, avoid eating between meals, eat slowly, masticate thoroughly.

- (3) Take a daily morning bath of not more than ten or twelve minutes duration, using hot water and soap, but gradually reduce the temperature by turning on cold water in bathtub until the water is sufficiently cold to cause pores of skin to contract, and finish by a vigorous use of coarse towel and brush until the skin presents a healthy glow showing an increased capillary circulation.
- (4) Use loose porous underwear, porous clothing, loose collars, shoes that will keep the feet dry, avoiding the use of rubber foot-wear as much as possible.
- (5) There should be a daily evacuation of the bowels. Should there be a tendency to constipation that can not be corrected by massage or by the use of figs, prunes or other fruits, a mild laxative should be employed that acts as a tonic to the digestion.
- (6) Go to bed early, and rise early, taking from 7 to 8 hours rest in a dark, quiet, well ventilated room.
- (7) Do not use alcoholics nor tobacco in any form—scientific investigation has shown cigarettes to be especially harmful. Tea and coffee should be used very moderately, if at all.
- (8) Married life is conducive to longevity. All manner of excesses should be avoided.

In addition to these hygienic hints, we should not lose sight of the fact that a full, rich, and abounding health is the normal condition of life. Anything else is an abnormal condition, and that abnormal conditions, as a rule, come through a violation of some of nature's laws. A natural born optimist, who sees only the rosy side of life, evidently has a much better chance for a long life, than the pessimist who sees the things of this life through a cloud. It is unprofitable to indulge in worry, thoughts of hatred, envy, malice, jealousy and revenge. "As a man thinketh, so is he."

We are continually building, and externalizing in our bodies conditions most akin to the thoughts we entertain. Then if you desire to have in your body all the elasticity, all the strength and beauty of your younger years and your life prolonged have care concerning your thought world, and cultivate cheerfulness, pure thoughts, good-will, noble deeds and constantly keep a high ideal of health and harmony before your mind.

T. A. SON, M. D., Bonne Terre, Mo.

## Hygiene of Childhood.

Hygiene is the science and art which relates to the preservation of health. Much has been written upon the subject of public hygiene and in Missouri we have some excellent public health laws which, unfortunately are given slight consideration by the town and county health boards of the State. "There is many a slip 'twixt the making of a law and its enforcement." As these laws, if observed, promote the health of communities, so there are rules of living and habits of life, by attention to which, the health of the individual may be preserved or increased.

Health is a quality of body difficult to define, but it is at least safe to describe it as exemption from disease, and it is dealt out in different measure at different periods of life.

The physical development and health of the child is the product of three factors:-Inheritance,-it is, of course, of first importance to be born of healthy, long-lived stock, but this is beyond the power of the physician or guardian to alter; surroundings or hygienic care, and food; these last two are almost entirely within the control of the parent, teacher, and medical adviser. Disease is no longer regarded as the penalty or consequence of sin, but of ignorance. If a child develops tuberculosis it is not because the child inherited the disease, but because it did not have proper food, care and protection against the infectious agent,—the results of carelessness or ignorance. If mental dullness is due to some imperfection of the eyes or ears, the remedy lies in the treatment of the eyes or ears; or, if lack of energy or initiative is the result of imperfect aeration of the blood, due to adenoids blocking the passage of air in the windpipe, the remedy lies in a simple surgical operation, and as the health of the child is an index to the health of the community, it behooves us to concern ourselves with respect to the surroundings, habits and care of the children of the State.

The period of life generally designated as childhood is between the ages of two and seven years, and is, from the hygienic standpoint, the most important of any of the life periods. Probably, due to an increased activity of the lymphatic system during this period, there is a greater tendency to catarrh of the mucous surfaces and susceptibility to tuberculous infection. It is now generally believed that a large majority of tuberculous people were infected in infancy and childhood, the disease re-

maining latent to develop during the period between adolescence and maturity. It is therefore important that every effort be made to separate children from tuberculous parents and associates. It might be mentioned here that another important disease frequently found in children at this age is rachitis. We do not know the exciting cause of the disease, but its origin, as well as the severity of its course, is favored by circumstances which have a general influence on the course of every disease.

Young brains and spinal cords are over-alert to external impressions and peripheral irritations; sometimes sexual excitability or vicious practices may be discovered at this early age, and wise nursing and medical advice cannot be too strongly insisted upon in addition to provisions for proper amusement and employment. A child between two and seven should sleep ten to fourteen hours out of every twenty-four; both rest and exercise should be provided—a play room in winter and play ground in summer.

Every child requires sunlight. Cold and dark rooms should be carefully avoided; too much clothing is worse than not enough; night-caps should be discarded at an early age, because they retard the growth of the hair which is the natural covering of the child's head. The child should have a bath once daily, preferably in rain water at a temperature of from 70 to 90 degrees, according to the season of the year. The essential factors for the maintenance of health in children are proper food, even temperature and sufficient light and cleanliness.

The principle of thoroughly effective separation between the diseased and the healthy is at no period of life so important as in childhood, so that the insistence upon a strict quarantine in the event of the appearance of every contagious disease cannot be too strongly urged.

F. H. MATTHEWS, M. D., Liberty, Mo.

## Medical College Agreement.

The State Board of Health has reason to feel proud of the fact that it has this year succeeded in securing from every recognized medical school in Missouri an agreement in writing to accept nothing below the level of an actual diploma from an accredited high school as an entrance credential. This eliminates an abuse which has been the cause of considerable acrimonious discussion between the Board and some of the schools of the State. It is a well known fact that that section of the

statutes which requires the Board to examine graduates in medicine who matriculated on certificates issued by county school commissioners has resulted in encouraging a large number of young men to study medicine whose pre-medical education has been wholly insufficient and whose qualifications to practice medicine have been much below that which this enlightened and progressive age demands. This was made possible, of course, because the medical schools of Missouri are unwilling longer to graduate students who are unable to pass the very fair but searching State Board examinations.

DR. F. H. MATTHEWS, Liberty, Mo.

## "Blow the Baby's Nose."

In the past few years a great deal has been said and written regarding the bad effect of adenoids in children, upon their mental and physical development. This awakening has been very timely and today there is hardly a mother of the reading and thinking class who is not well acquainted with the symptoms and sequella of adenoids in the vault of the pharynx. These mothers are no longer afraid of "the consequences" when informed on competent authority of the presence of these growths and are only too glad to have the necessary work done toward their eradication.

There is, to my mind, a very common condition existing in nearly all children, that if properly attended to would, I think, prevent the development of these fungoid growths in a large portion of these children. That is neglect of the child's nose. The child whose nose needs "blowing" is a very common sight, in fact it has been my observation that very few mothers teach their children to clear their noses properly, but rather leave this accomplishment to develop in later years when pride begins to assert itself, and ere that time the damage wrought to the child's respiratory tract by the ever constant accumulation of the secretions from sinusoidal inflammation, etc., in the nose has been such that only an operation to eradicate can properly intervene. One look at an adenoid growth is sufficient to show that it is a formation propagated in a locality not properly drained or aerated. They very much resemble the slimy, mossy growths of the vegetable world. I do not believe that children are born with adenoids, but that they are developed after birth;

and it is my opinion, shared in by others, that these mucoid accumulations in the nose allowed to remain there nurtures and develops these growths.

To the end that the nose and naso-pharynx may be constantly and properly supplied with a current of air, it behooves the mother and those having young children in charge to begin early in the child's life and see that its nose is cleared thoroughly and often, and at the earliest possible age teach the child to perform this part of the toilet for itself. It is surprising how young a child will begin to demand that its nose be cleared and to manifest discomfort if the nasal passages are occluded.

The thought I wish to develop is this: pure air passing, unobstructed, through the nose into the lungs, coming in free contact with adenoids, is a most valuable therapeutic agent stimulating their absorption and ultimate cure or in some measure prevents their development and growth.

BLOW THE BABY'S NOSE.

DR. D. C. ADCOCK, Warrensburg, Mo.

## OBJECTIONS TO OPTOMETRIST BILL.

Hon. Jones H. Parker,

Member of Legislature, City.

Dear Doctor:-

In compliance with your request I am herein submitting to you in brief some of my objections to the creation of an optometric board in Missouri.

Yours very truly,
J. A. B. ADCOCK,
Secretary.

The eye is the most intricate and complicated organ of the human body and when diseased it is one of the most difficult to treat properly. Besides the diseases existing in the eye itself it is affected by various reflexes from different parts of the body. Therefore no one but a thoroughly qualified physician, educated in all the branches taught in medicine and, in addition to this, specializing on the eye, should be entrusted with the management of this organ when diseased:

The so-called optometrists fit glasses to their customers. So does the ordinary spectacle vender fit glasses to his customers.

They both have the same qualifications and are in the same class. The oculist who is an educated, licensed physician knows the limitations of the use of spectacles. The optometrist or spectacle vender, in the nature of things, does not. The oculist before fitting glasses to his patients makes a thorough examination of the eye and of the reflexes affecting the eye. The optometrist or spectacle vender does not, because he is not capable, not having learned the intricacies of this work, which requires years of study in the fundamental branches of medicine.

An organized body of spectacle venders calling themselves "optometrists", because of having attended a few weeks in some place called a school to teach how to assist people to look through glasses in order to get the best possible vision through these glasses and then prescribing, does not give this body of, socalled, optometrists any more skill in the selection of glasses than most of the ordinary spectacle venders have. The optometrist in his organization feels now that he is on the border line of being an oculist. In some places he is advertising to relieve conditions of the head and stomach and nervousness in general by fitting glasses. Like the spectacle vender, he can only guess at the effect of the glasses upon the nervous system or upon any ache or pain the patient may complain of, it being absolutely out of his knowledge to ascertain the real conditions of the patient or to tell whether his patient has a curable or incurable disease or whether it simply is a refractive error which may be corrected by proper glasses.

My objection to an optometric board is that it gives this organized class of spectacle venders a standing near the oculist, deceiving many citizens, causing them to put faith in their statements and advertisements to cure troubles that they know nothing about, by fitting glasses; but the laity, being deceived by the high authority of the State authorizing them to do this work, will submit in many instances to their glass-fitting treatment when they are really in need of urgent medical treatment and advice.

As the law now stands they can fit glasses without molestation and this is all the recognition they should have, as so many of them do this work improperly; and with their limited training, are not qualified to receive the endorsement of the State, in treating the eye by fitting glasses or otherwise. Therefore it is not right for the Legislature of the State of Missouri to put this

organized class of spectacle venders on a level with, or make "near"-oculists of them, as the creation of this Board would do. Our State Legislature should not create a Board that would license any individual to treat the sick and afflicted who is not well grounded in the principles of medicine. Anyone with an eye affliction is surely sick.

### Possibilities of Hygiene.

There is much truth contained in the old adage, "A sound mind in a sound body!" Practically, however, little has ever been done until very recently, especially in Missouri, to obtain this most desirable balance; there have been endless instructions to obtain the sound mind; little or none, to secure the sound body; and when the latter has developed, it has been rather by provision of Providence than by the provision of man. There have been some efforts to restrain too ambitious students from undue sacrifice of exercise or sleep, but of direct teachings as to how to obtain and maintain the physical health which is essential to success, almost nothing. Think, for a moment what has been accomplished simply by teaching and practicing some of the simple rules of health, and how much more could be accomplished if a few in every locality would devote a little time and energy along the line of hygiene and sanitation in their immediate community.

A large percent of our children attend school. Here, obviously, is the place and opportunity for reaching not only the coming generation, but almost every home in this generation. We have made a fair beginning in the matter of controlling contagious diseases, through the excellent work of the doctors and health officers. We know that all the transmissable diseases,—measles, small-pox, diphtheria, scarlet fever and the rest—reach their height about the middle of the school year, after our children have been congregated in the classrooms for some weeks, and that, conversely, they reach their lowest ebb toward the close of the summer season, after the children have been scattered and kept in the open air.

Could not lectures along the line of hygiene, sanitation and preventive medicine be added to our school curriculum? It might be best that they be given in the form of illustrated lectures and so arranged in duration and frequency that they would be restful rather than burdensome.

Only the barest outlines of instruction in hygiene are here possible. It should include directions as to avoidance not only of tuberculosis, but of all other infectious diseases, and this should include a discussion of the germ theory of diseases. value of proper environment, of fresh air, open windows, free ventilation, should be emphasized, as affecting general conditions; and we can afford to dwell upon the statement that, as between heredity and environment, the latter is more important. Permit me to enumerate some of the subjects which could be taught with much benefit in a course of hygiene: Such as pulmonary diseases require attention to correct breathing, the disposal of sputum, the importance of fresh air, the dangers of dust and of infections by direct contact. Hygiene of the skin and instructions as to the value of bathing, the various kinds of bath and their effects. Contagious diseases of the skin and prophalatic precautions to use to prevent their spreading. Care of the eyes including suggestions as to the proper position for reading, writing, studying and the use of proper corrective lenses.

The preventive phases of prevention are evidenced in such problems as vaccination before entering school, the exclusion of contagious diseases, quarantine and isolation under the supervision of the attending physician. The use of the individual pencil, cups, towels, etc., as well as instructions regarding the kitchen, living-room and sleeping-room, and involving problems of air, light, sleep, clothing, heating and bathing. The value of screens and the necessity for keeping all rubbish cleaned up.

We could impress the fact that individual health means community health, and that, by a step further, means national health and in view of the fact that our school children of today will be the home builders of the next generation, I believe that if such special lectures on hygiene were added to our teaching, it would be the best investment ever made by our state.

DR. T. H. WILCOXEN,
Bowling Green.

### The Hygiene of Old Age.

The hill-crest of life is reached after a struggle of years, easy of access at first, but as the top of the hill is neared things are not the same, and tasks seem harder to accomplish; but this does not begin to be seen or felt until one reaches the middle milepost of life, and stands weary on the crest of life's highest and steepest hill, which marks the middle area in his existence, and he stands on the threshold of the beginning of old age. The crest of the long hill he has ascended with joy and sadness equally balanced, as he wended his way up life's rocky hill, stumbling along over great boulders, and in shadows, and again the path seems smooth and sunlit. Equally, are life's joys and sorrows divided, as the pendulum of the clock swings the way of sorrow and sadness, so does it swing equally to the other side in joy and happiness; the wheel of life turns as of old, the rim remaining in the mud, but part of the time, equally is it in the So is it with life, the sunshine and shadows are always present as we climb life's hill, and from the top of this long ascent which marks life's span, we see the other side, and the descent is steep and quite as full of stones and obstacles to be considered. The downward path marks the descent of life, or that time that one must necessarily pass in the course of human events when one's life has gone beyond the hill crest, which marks life's middle milepost and continues toward the setting sun down the hill of life, which is the declining years, that marks the approach to our journey's end.

The stamina with which one may descend, depends upon how this energy has been spent coming up the hill, and how much energy has been stored for the descent.

While people past middle life feel about the same both mentally and physically, more or less as they have all their lives, still there has taken place a systematic change. They have reached both their mental and physical zenith, and have commenced to retrogress. They are on the other side of the hill now, and are slowly making their descent. The systematic change that has taken place is scarcely discernible, however it is there and progressing steadily as years go on until finally, old age overtakes the individual as a result of the progressive undermining that takes place in the system, which is no more nor less than the gradual wearing out. Sometimes the manifesta-

tions of this wear and tear are earlier in some than in others, depending upon the adroitness and wisdom in conserving their energies, as they ascend the hill. After middle life is reached the individual naturally has less vim than before, though frequently they feel strong, and unfortunately led to do things that require more energy than they have stored, or than they have strength to accomplish. The results are disastrous, and sometimes end in death, as I have seen. After sixty years of age, scarcely any severe exercise should be indulged in, for the arteries then have hardened somewhat, and do not permit of a severe tax that would be induced by such exercise as golf, tennis, etc., but the milder exercises should be substituted, such as walking and the moderate use of Indian clubs, etc.; the use of the latter to keep the muscles of the upper part of the body in good It is a mistake to think because one has passed sixty years or seventy years, that they do not need physical exercise, for the body goes on making toxins and acids that have to be taken care of through one's entire life, from the cradle to the Nature seems to look after infants, their legs and arms are more or less continually going, that is the way they exercise and keep the toxins in their proper place. True, the exercise is mild, but it answers the purpose. Severe exercise increases the heart beat, making more work for the heart and puts an extra pressure on the already weak blood vessels. Uric acid is almost an omnipresent accompaniment during this period of life's afternoon, and a profound weakness of the blood vessels follow severe exercise in this or any other condition that has rendered the vessels weaker, is quite likely to produce a rupture To insure longevity, one should not ignore the natural signs of declining years, and prepare the system to stand the strain that the tax may be taken from the nervous system. Nature tries her best to do that for us. You see old people dozing while in a chair, that is Nature's way of repairing waste and her way of replacing the energy taken from her storehouse, so from that we learn that sleep is our most powerful reconstructing agent, and has more to do with combating the encroachment of old age, than anything else. Hence, the strict adherence to the laws of nature, as we see them as applied to the aged must necessarily be, the recognition of mild exercise of such a nature as to render the individual free from toxins and to burn up the acids that accummulate rapidly at that age, but are as easily dissipated by mild exercise, etc., and the constantly refilling of the depleted storehouse with vital energy, placed therein by refreshing sleep. The abstinence from stimulants must not be overlooked, for they do nothing but harm. They increase the blood pressure against the walls of the now weak and unelastic vessels and are liable at any time to break from any extra pressure put upon them.

These simple things, if thought of in time, will add years of usefulness and happiness to yourself and others, as you pass joyfully through life's twilight to the threshold of the Great Beyond.

DR. MARC RAY HUGHES.

Metropolitan Building, St. Louis, Mo.

#### Dollars Versus Deaths.

The art of sanitation has a widely different basis from those applied sciences which draw their conclusions on mathematical principles. An engineer can calculate to a nicety the cost of a city lighting plant, the cost of its maintenance, and the exact results which will be obtained; and the corporation employing him will be able to determine closely what return the money invested will bring. The sanitarian, on the other hand, while he deals with the cost of public health work in hard cold dollars, finds on the results side of his accounts savings in deaths which cannot be determined precisely, savings in sickness which are still less exact, and sociological and sentimental factors which cannot be determined at all. The biological sciences upon which sanitation is based and the human material upon which it operates are in their very nature insusceptible of mathematical precision; even the results of vital statistics, "the bookkeeping of public health work," require analysis and interpretation which takes account of the fluctuations and inexactitudes of their original data.

Statistics are, however, becoming constantly more accurate and sanitary science more quantitative. Health officers make predictions and promises with more confidence and certainty. And now from Rocky Ford, Colorado, comes a proposal unique in its courage. The health officer of that community, having surveyed the public health situation and made his specific recommendations, addressed his board as follows:

"You gentlemen, as the board of health and legislative council of this community are directly responsible, and I as your

executive officer if I fail to do my part, if another epidemic of typhoid breaks out in our town. . . . I wish I could force this home upon the conscience of every state and municipal legislator in Colorado. . . A quarter of a century ago this could not have been said. But increasing knowledge brings increased responsibility. . . . This matter cannot be waved aside as a visionary ideal based on impractical theories. We act today on facts. The visionaries were the Pasteurs, the Listers and Flints of the generation preceding us . . . They were true prophets. . . So confident am I that what I tell you can be made true here, that I make you this offer. We will take the year of 1913 as a basis; give me the ordinances and regulations, I ask, with authority and funds to enforce them; give me a competent salary so that I may devote my whole time to public health work; if the death rate during the third year is not less by at least three to the thousand, I will return the amount of my salary to the city, and I will put up a bond in the beginning to secure you."

Bold words these, of the sort that shake the inertia of lagging town and city governments. How far the proposal in this particular case is justified we do not presume to judge; the health officer of Rocky Ford has doubtless reckoned up his conditions before making his predictions. The significant point is, as he remarks, that a quarter of a century ago no health officer would have dreamed of making such a promise; today the mere fact that it is made by even one health officer is a sign of the times.

The offer was not accepted and the prediction tested, but with the data now available from fields where definite results have been obtained from definite expenditures and efforts—measured reductions in typhoid fever, diphtheria, and other communicable diseases, in infant mortality, and even in slowly yielding tuberculosis—quantitative forecasts conservatively based on sound data are certainly justified. Already the time is fore-shadowed when vital statistics will be comparable in exactitude with financial statistics, and when any excess above an accurately determined "normal" death rate for each community will be regarded as a mark of culpable municipal negligence.—American Journal of Public Health.

#### The Diet of the School Child.

Harold G. Calder, M. D.

Most of our ideas about diet have been handed down from generation to generation. Occasionally magazine writers, either "faddists," cooks, or physicians, have tried to reform the country in general. Medical magazines and text books, abounding in scientific material, have attempted the instruction of physicians. Yet, in spite of these attempts, people at large continue to eat what their mothers and fathers have always eaten, namely—those things which taste best, and which can be most easily obtained and prepared, with no thought whatever as to their desirability as food.

When one considers that from three to eight per cent of our school children are improperly nourished, and that from twenty to thirty per cent are decidedly below the physical standard, it is obvious that knowledge of the causes of this impairment of health should be more thoroughly disseminated. Insufficient fresh air and lack of sleep are certainly important factors; but improper feeding is the most important. We all know how surely poor nutrition predisposes to illness, and thus indirectly to death. The importance of information concerning good food and proper feeding is therefore most evident.

By "good" food we mean not only enough food, but food for good quality, well cooked, to which nothing harmful has been added. Proper feeding implies careful mastication, regularity in meals, and the avoidance of reliance upon one variety of food to excess.

To supplement good feeding it is necessary to have a good appetite, and the digestive organs must be working properly. It may be necessary to secure these normal conditions by correcting anaemia with iron and fresh air, by improving breathing with the removal of diseased tonsils or obstructing adenoids; by treating or extracting decayed teeth; and by avoiding late hours. When a child has a poor appetite, it is always an indication that something is wrong; that somewhere in its economy there is an abnormal condition requiring attention.

Only relatively small number of parents are financially unable to provide properly for their families, and the majority of these families are assisted by private or public charities. Some children are really starving because of their parents' craving for

alcoholic drinks, the purchase of which soon depletes a scanty purse. It is for the future to work out a practical way for helping these unfortunates.

The majority of cases of improper feeding of children can very properly be attributed to ignorance of food values, and ignorance of proper food preparation. Let me briefly consider some of the more common errors that parents make in regard to the feeding of their children.

Among all classes of people over-indulgence in the use of confectionery and pastry is a most common fault. Children easily acquire a liking for sweets, and parents, relatives, and friends continue to indulge them in this taste. Most healthy children can, with impunity, eat sugar in moderate amounts; and, for a time at least, many children can consume considerable quantities of confectionery without any real harm. As a general rule, however, excessive eating of sweets is one of the most potent causes of gastric disturbances. This is especially true when cheap candies, often containing mildly poisonous ingredients, are used, and, especially, when such candies are eaten on an empty stomach. Over-indulgence in sweets is usually accompanied by irregularity in eating. Children should have regular meals, and eating between meals should be discouraged. A small amount of wholesome sweets may be eaten, preferably at the end of a meal. "Penny candies" should always be avoided.

Poor cooking of food is unfortunately a very common fault. The constant use of insufficiently cooked meats, starchy foods, and vegetables plays an important part in the production of digestive disturbances. In order to be properly digested and assimilated, vegetables, for children as well as for adults, must be thoroughly cooked. Foods that are prepared in the frying-pan should be given to children only rarely if at all.

Decayed and unripe fruit and vegetables are eaten to a very large extent by the poorer classes. Bananas especially, because of their slow process of ripening, are apt to be eaten when only half-ripe. This fruit, even when thoroughly ripened, should be given to children with great caution.

An insufficient breakfast is of altogether too great occurrence in the lives of many school children. It often consists merely of bakers' bread or buns, with tea, coffee, or cocoa. This is absolutely not enough for a growing child.

The drinking of tea and coffee is so wide-spread among adults that it is not surprising that the majority of children now indulge in this habit, which is for them pernicious. Dr. Cornell, of Philadelphia, has determined as a result of careful questioning of 2,169 school children concerning their morning meal, that fifty-eight per cent of them drank coffee and eleven per cent drank tea. These beverages are not only valueless, so far as food values are concerned, but the continuous ingestion of the alkaloid (caffeine) contained in them is decidedly injurious to an immature nervous system. Although some children may show no apparent trouble following their use, when considering children as a whole, we must absolutely forbid them.

A school-child's breakfast should have variety enough to properly stimulate its appetite. There should always be sufficient proteid to support the child until its noon-day meal. This will be supplied by eggs or fish. To this might be added cereals, if well-cooked, and fruit of different kinds. Home-made bread when well-baked, is always superior to the lighter commercial bakers' bread.

In this connection it is proper to discuss the question of the school lunch. Statistics show that the average weight of the school child has increased in schools where the serving of lunches has been instituted. They certainly should be beneficial, even if only serving as competitors with the attractions of the candystore across the street. Children who have had an early breakfast usually require a small lunch during the morning recess. Those however who have breakfasted late do not need this lunch, as it tends to spoil their appetite for dinner.

For this recess-luncheon bakers' buns, newly cooked and often soggy, sweet crackers, and bananas are certainly not to be recommended. Sandwiches made of ham, chicken, or beef, with milk or apples, are advisable. If some sweets must be included for a time, in order to wean a child from "Penny Candies," they should be selected with care.

It seems to be generally well-understood that dinner should consist of fish or meat, with potatoes and other vegetables, bread and butter, with or without some simple dessert.

An ample supper for a child may be supplied with eggs, fish beans, rice, macaroni, corn-meal or oatmeal porridge, bread and butter, with milk and stewed fruits. Beans, when served to children must be thoroughly cooked, as they are more difficult to digest than meat. From an economic point of view, however, they furnish a very important article of diet.

The logical way to remedy harmful conditions is to attempt to remove the exciting cause. In the case of children's diet the proper place for the correction of errors is in the home. Teachers should furnish the school nurses with addresses of all pupils whose physical condition is below par. After careful investigation of their homes and their habits of living, it would then be possible to intelligently advise the remedy. Cases almost hopeless may be greatly benefited in the fresh-air school where supplementary feedings are supplied. Other cases need a few weeks in the country. In this connection the Lakeside Home and the Preventorium at Hoxie are doing most commendable work. Educational measures along the line of instruction as to proper diet should begin in the home, with the child's mother. Here preventive measures may be most easily instituted, and here physicians, nurses, and teachers should use every means, and take advantage of every opportunity of furthering instruction along hygienic lines.—Rhode Island Bulletin.

## Buying Health in Bottles.

"Our national quality of commercial shrewdness fails us," says Samuel Hopkins Adams in "The Great American Fraud," "when we go into the open market to purchase relief from suffer-The average American when he sets out to buy a horse, or a box of cigars is a model of caution. Show him testimonials from any number of prominent citizens and he would simply scoff. Now observe the same citizen seeking to buy the most precious of all possessions, sound health. Anybody's word is good enough for him here. An admiral whose puerile vanity has betrayed him into a testimonial; any obliging and conscienceless senator; a grateful idiot from some remote hamlet; a renegade doctor or a silly woman who gets a bonus of a dozen photographs for her letter,—any of these are sufficient to lure the hopeful patient to the purchase. He wouldn't buy a second-hand bicycle on the affidavit of any of them, but he will give up his dollar and take his chance of poison on a mere newspaper statement which he doesn't even investigate."—Exchange.

#### HOW TO CURE A COLD

The way (ka-choo!) to cure a cold Is just (ka-chee!) like this: Do not in wraps yourself enfold As in a chrysalis; Expose yourself to good fresh air A lot (ka-choo! ka-chee!), Don't make yourself, by too much care, As tender as can be: Take lots of outdoor exercise, Don't dread the chill night air, Shun heated rooms, if you'd be wise, And rubbers never wear: Thus you will hardened be (ker-chow!) Till colds won't trouble you, I've proved this recipe-that's how I always do (ka-choo!).

LEE SHIPPEY-In K. C. Star.

#### Plantation Tales.

#### DOWNWARD REVISION.

"An old negress sat upon the wharf, shading her pralines with part of a newspaper, while she read another part. A gentleman, thinking to confuse her, winked at his companions and said:

"Aunty, you seem to read the news. What do you think of the promises of the Republican party when it was in danger, and the change of heart that was scheduled to take place in Aldrich, Cannon, Taft and the rest—the promised revision downward?"

"Well, suh," replied the old darkey, "from what I can make out, and de way prices has riz, dat party and dem policies and dem men all needs revisin, down and out. Dey puts me in mind of a case of religion my gran's Rastus got one time.

"Rastus is de meanest, ongodliest, triflin'est no-countest, sinfulest nigger boy dat ever shot craps or robbed henroosts, and cuss—why, dat little debble could cuss might nigh as ransom as old man Joe Cannon hissef, and dat's sayin' a heap!

"One time, when Rastus was in de worst bonds of sin and iniquity, he had a job o' totin' shingles whar dey was repairin' a steep roof up on a four-story house. He got keerless and was settin' up on de ridgepole a-killin' time. Some way or nudder he slipped, and he started to slidin' toward de eaves. He was a-clawin' and a-scratchin' for dear life, but he couldn't scotch hissef. He kept on slidin' faster and faster, and a-gettin' skeerder and skeerder.

"When he seed dat he was gwinter scoot right over de edge and drap sixty feet to de sidewalk, he knowed dat he was soon to be a dead nigger, and he begun to beg and promise and pray like lightnin'; 'Lawd, save me and I'll be a good nigger—Father 'thart in heaven hallud beth'name kingdom come th' will be done—Never mind, Lawd, I've done cotch on a nail by my britches!"

## QUANTITY VS. NUMBERS.

Old Uncle Rastus asked George Washington Johnson of Utah, why he married such a "monst'us big woman."

"You see it was 'dis way," said Uncle George, "the Mormons has as many women as dey want and I taught bein's I couldn't have as many as dey had I'd get as big a one as I could while I was a-gittin'."

#### HAD TRIED HOT WATER.

A buxom colored sister once approached her pastor and said: "Brudder Johnsing, me an' my ole man don't agree at all. We is all the time quarrelin'. Will you oblige me wid some advice?"

The pastor replied: "Sister Jackson, has yo' tried heapin' coals of fire on his head?"

She then exclaimed: "No, Brudder Johnsing, but I'se tried hot water."—National Monthly.

## REPORT OF THE STATE BACTERIOLOGIST.

SUMMARY OF EXAMINATIONS MADE IN THE LABORATORY FOR THE LAST QUARTER OF 1914.

	Tuberculosis (sputum)	Typhoid (Widal)	Diphtheria	Malaria	Water	Gonococci in- fection	Rabies	Tuberculosis (not sputum)	Miscellaneous.	Totals
October	154	224	86	22	41	17	0	3	17	564
November	178	148	199	8	36	15	1	7	14	606
December	166	108	134	15	37	6	2	3	15	486
Totals Grand total	498	480	419	45	114	38	3	13	46	1,656

Tuberculosis sputum per cent positive	5
Typhoid per cent positive	4
Diphtheria per cent positive	4
Water, coli, per cent positive	0

During the last quarter there has been a material increase in the amount of work done in the laboratory. The same being an increase of 11.4 per cent over that of the previous quarter and 11.8 per cent above the corresponding quarter of 1913.

In addition during the quarter the anti-rabic treatment has been administered to nine patients which shows that this opportunity for treatment is being liberally taken advantage of and also the favor with which it is accepted by the general public.

The administration of the anti-rabic treatment to needy citizens of the state free of charge has become a permanent duty of this department. This treatment is prepared in the Laboratory of the U. S. Public Health Service, Washington, D. C. and consists of daily treatments for twenty-one days. It can not be sent out and will be administered only at the laboratory Any one desiring the treatment should notify the State Bacteriologist, giving full information regarding history and diagnosis of the case. A lapse of three days should intervene between the notice that treatment is expected and the arrival of the patient for administration, as a new supply of material is necessary for each case. The treatment should be begun as

early as possible after the suspected infection and in no case should it be delayed longer than fourteen days.

There is kept on hand at the laboratory a supply of typhoid vaccine for immunization. This is supplied to physicians upon request. When writing for the vaccine, kindly state the number of patients you wish to immunize and enclose ten cents in stamps to cover postage.

## Preparation of Specimens for Sending to the Laboratory.

Sputum.—Regulation sputum outfits may be obtained by addressing the State Bacteriologist, Jefferson City, Missouri. Full directions accompany each outfit. Physicians are urged to use this means of sending specimens to the laboratory.

Blood.—It is impossible to examine a single specimen of blood for both typhoid and malaria. For the Widall test for typhoid the blood is best obtained by pricking the lobe of the ear with a flat or a three-cornered needle, or the point of a knife. The ear should first be rubbed with cotton and alcohol, then dried, and the needle should be sterile. Two or three good-sized drops should be collected on filter paper provided by the laboratory for this purpose.

For malaria the blood is obtained in the same way, but must be spread in a thin, even smear on a glass miscroscope slide. This is done as follows: A small drop of blood is received onto the slide near one end by touching the slide to the blood as it hangs from the lobe of the ear. The slide is then laid on a firm flat surface, and the end of a second slide, held at an angle of about thirty degrees with the first slide and touching it, is brought into contact with the drop of blood. In two or three seconds the blood will have run across the slide at the point of contact. Then the second slide is pushed along on the first with a moderate speed, so as to leave a thin even smear on the surface of the first slide. A second smear may be made in a similar manner on the other slide. Caution: Have slides perfectly clean, handle only by the edges and work rapidly. Allow them to dry in the air without heat.

*Blood* should never be placed between slides and sent to the laboratory.

Swabs for Diphtheria.—The regulation tube and mailing case, to be obtained from the county health officer or from the State Bacteriologist, should be used for this purpose. Full directions accompany each outfit.

Water.—Specimens of water are examined for their potability, chiefly determined by the absence or presence of colon bacillis an index to sewage pollution.

For a total bacterial count it is imperative that all samples be iced from the time of taking until they reach the laboratory. For this purpose special containers may be obtained from the laboratory, express charges to be paid both ways by sender of specimens.

Pus.—Pus, to be examined for gonococci, should be sent on a slide prepared as follows: A small amount—much less than a drop—should be mixed on the slide with a small drop of water and thinly spread over an area a half inch or more in diameter, and allowed to dry. Do not press slides together.

Rabies.—Unless the animal shows symptoms of rabies, it should not be killed, but should be held for observation, in which event, if positive, death will ensue in a very few days, in ample time to begin treatment of the patient. Do not kill the animal by a blow or shot in the head as this may make a proper examination impossible. The head only of the animal should be sent, and that at the earliest possible moment. The head is to be placed in a tin bucket with a tightly fitting cover, which bucket is to be placed in a larger wooden or iron bucket and surrounded by sawdust and iced. The heads of animals freshly killed may be sprinkled with salt, packed in wet sawdust in a strong wooden box and expressed.

*Urine.*—Specimens of urine are examined for tubercle bacilli in suspected cases of genito-urinary tuberculosis.

In sending specimens to be examined for tubercle bacilti, the following points should be carefully noted and such information should accompany specimens:

- 1. The specimen should be obtained by catheter, and drawn directly into a sterile bottle.
- 2. It should be stated upon the card accompanying the specimen that it was obtained by catheter.
- 3. Two or four ounces of urine should be sent and a preservative should be used.

Feces.—Feces will be examined for tubercle bacilli and for the ova of intestinal parasites (hookworm.)

### VITAL STATISTICS.

Summary Showing Comparison of Important Causes of Deaths and Registration of Births During October, November and December.

Statistics compiled for the fourth quarter of 1914, October November and December, show there was a total of 9,877 deaths. Of this number 6,457 were males, 3,420 females, 9,060 white, 817 black. The month of December showed the greatest number of deaths, 3,515 and October, the lowest, 3,086. For the same quarter in 1913 there were 9,919 deaths, or 42 more than in 1914. This is a noticeable improvement in the health conditions of the State, compared with one year ago.

Tuberculosis (all forms) heads the list of cause of death, for the quarter with 1,056, while during the same period in 1913 there were 1,095 fatalities from this disease, or a decrease in 1914, of 39.

There were 912 deaths from diseases of the heart, other diseases of the nervous system 880, pneumonia 877, acute nephritis and Bright's disease 823, cancer 501, diarrhea and enteritis (under two years of age) 464, accidents 368, diphtheria and croup 302, typhoid fever 278, diseases of the respiratory system 269, suicides 203, diabetes 96, puerperal state 83, homicides 74, influenza 48, scarlet fever 37, whooping cough 24, acute anterior poliomyelitis 11, epidemic cerebrospinal meningitis 4, measles 3.

There were 18,459 births reported as having occurred during October, November and December, of which 9,588 were male, 8,871 females, 17,896 whites, 563 black.

It will be noted from the foregoing that there were 8,582 more births than deaths during the quarter.

C. J. KAISER,

Chief Statistician.

TABLE SHOWING DEATHS IN THE STATE FROM TWENTY-FOUR IMPORTANT CAUSES, FILED WITH THE CENTRAL BUREAU OF VITAL STATISTICS DURING THE MONTHS OF OCTOBER, NOVEMBER AND DECEMBER, 1914 (STILLBIRTHS EXCLUDED).

Causes.	Oct.	Nov.	Dec.	Totals
Typhoid Fever	98	98	82	278
Smallpox				
Measles				3
Scarlet fever		15	14	37
Whooping cough	8	8	8	24
Diphtheria and Croup	84	116	102	302
Influenza	3	10	35	48
Tuberculosis of Lungs	289	318	335	942
Other forms of Tuberculosis	41	30	43	114
Cancer	155	168	178	501
Diabetes	33	27	36	96
Epidemic Cerebrospinal Meningitis	1		3	4
Acute Anterior Poliomyelitis	4	2	5	11
Other Diseases of the Nervous System	230	341	309	880
Diseases of Heart and Circulatory System	249	323	340	912
Pneumonia and Bronchopneumonia	176	281	420	877
Other Diseases of Respiratory System	73	68	128	269
Diarrhea and Enteritis (under 2 years of age)	253	136	75	464
Acute Nephritis and Brights Disease	251	297	275	823
The Puerperal State	25	23	35	83
Accidents	150	119	99	368
Suicides	74	54	75	203
Homicides	22	27	25	74
Other causes	856	815	893	2,564
Totals	3,086	3,276	3,515	9,877

TABLE SHOWING BIRTHS FILED WITH THE CENTRAL BUREAU OF VITAL STATISTICS DURING MONTHS OF OCTOBER, NOVEMBER AND DECEMBER, 1914, BY SEX AND COLOR.

		. Ma	le.	Fen	nale.
Month.	Totals.	White.	Black.	White.	Black,
October	6,221	3,134	95	2,893	99
November	5,892 6,346	$2,942 \\ 3,231$	83 103	2,780 $2,916$	87 96
Totals	18,459	9,307	281	8,589	282
Totals by sex		9,	588	8,	871

DEATHS IN MISSOURI FROM SEVEN IMPORTANT EPIDEMIC DISEASES AND RATE PER 100,000 POPULATION FOR THE MONTHS OF OCTOBER, NO-VEMBER AND DECEMBER, 1914.

		Months	3.
Diseases.	Oct.	Nov.	Dec.
Typhoid Fever	98	98	82
Scarlet Fever	8	15	14
Whooping Cough		8	8
Diphtheria and Croup	84	116	102
Epidemic Meningitis	1		3
Acute Poliomyelitis	4	2	5
Totals	206	239	214

Other causes.....

489

400

148

Homicides..... Suicides..... Accidents..... The puerperal state.... 0100 NN Acute Nephritis and Bright's Disease..... -0 Diarrhœa and Enteritis (under 2 years of age). Other diseases of respiratory system..... .00 · 50 -Pneumonia, Broncho-pneumonia..... SHS Diseases of heart and circulatory system.... Important causes of death. . 22 0000 Other diseases of the nervous system . . . . . Acute Anterior Poliomy-Epidemic Cerebrospinal Meningitis..... Diabetes.... HH0 Other forms of Tuberculosis..... Tuberculosis of lungs..... : : Influenza..... Diphtheria and Croup... Whooping Cough..... Scarlet Fever...... Measles..... Smallpox..... Typhoid Fever..... **m**⊙∞ 13 134 21 Total deaths during the quarter..... 21 230 32 34 47 21 27 31 Total births during the quarter..... 13,604 21,687 15,282 Population, 1910..... Andrew— October.... November... December... Atchison— October.... November... December... Audrain— October.... November... December... October... November. December.. Totals.. Totals. Totals

Quarter Ending December 31, 1914. (Stillbirths not Included) During the in Missouri Births and Deaths Reported

Barry— October November December		68 26 36	26 22 13	7 6 1	 			2		J	2	1 1		  i	3	i		j	1 2			i	i i	7	9 6 4
Totals		130	61		 									 											
Barton— October November December		17 32 23	12 13 10	1	 			∵i	:::		i	i			2	3 2 1	1	<sub>i</sub>	.7	:::	3 i	···i			6 6 3
Totals	.7:01	72	35		 ·									 											
Bates—October		40 44 45	14 26 23	i	 		 1				2	. 2	i		2 4 5			i	1		2		i	: : :	10 7
Totals	,.,.,.	129	63		 	<u>.</u>								 											
Benton— October November December		30 20 33	27 4 16	1 1			). :.:					l 1		 	4 2	i	1		4 1			1 i			11 3 8
Totals		83	47		 																				,
Bollinger— October November December		21 21 23	5 11 13	3	 			, i			i			 	····i		1 2 3		1		i				3 3 6
Totals		65	29		 									 						,	210				
Boone— October November December		64 50 53	21	· · · · i	 		1				1 1 2	. 1		 	1 4	3 2 5	1 1 2		. 1		2				$\begin{array}{c} 7 \\ 9 \\ 12 \end{array}$
Totals		167	63		 									 	· · ·										
Buchanan—OctoberNovemberDecember		24 23 20	17 13 9		 						3	. 1	]		3 1 1	2	2		i		1				4 3 4
Totals		67	39		 									 											

## BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING DECEMBER 31, 1914—Continued.

	Pop	Tot	Tota										In	por	tant	caus	es of	death	1.								
Counties.	Population, 1910	Total births during the quarter	Total deaths during the quarter	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tubercu- losis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	Other diseases of the nervous system	Diseases of heart and circulatory system	Pneumonia, Broncho- pneumonia	Other diseases of respiratory system	hœa and Ent der 2 years of a	A c u t e Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
St. Joseph— October November December	77,403	96 113 110	95 84 103			1			····2	 ··i	11 7 1	$\frac{2}{1}$	5 8 11		7		11 23 21	7 3 12	7 4 11	7 ] 1 ]	1 5 1 2 1 1	10 7 11		7 2	1 3 3	··i	2: 2 2
Totals		319	282							• • •																7.,	
Butler— October November December	20,624	30 30 31	32 8 22						2 i	10	2 :::::		2 i	7			2	1	2 3 8		31. 1		1 :::				1
Totals		93	60															-17	4		1	7					
November	14,605	21 28 25	7 10 16			 				:::	3 1 1	3	···i			4	$\frac{1}{2}$	4	2	2	. 1	i	···i				
Totals		74	33					•									V* 6			, V)						,	
November	24,400	36 25 41	20 36 42	3							2 2 4	i	···i	1 1			 6 10		1 1 2		1 5 i	2 4 2		2	1 1 2	Ä.	1
Totals		102	98												1						10.7						

Camden— 11 October	20	7	]		 	:::		:::	1		1	:::			i						3		i 		2 2 3
Totals	53	3 19					 																		
Cape Girardeau 27 October November December	53	3 27	1 3				· · i	 1 1	1 3 1	2	1 3 1				$\frac{1}{2}$	3	1 2 5		1 4		1	 2	 i		4 7 5
Totals	126	62					 																0.11		
Carroll— 23 October	40	18							2		2 3				2 3 3	1 2 3			1		1 i				4 8 5
Totals	110	53					 							y., f.				Lat.							
Carter— 55 October November December	19			1		1					7.5				i	1 2 	1 1		2				:::		1 2
Totals	40	13					 																		
Cass— 22 October November December	29	15					 		1		 1 1				4 5	<u>1</u>	ı i				5	···i			8 7 5
Totals	128	54					 																1.77		
Cedar 16 October November December	30	7	]				23			1	12	i			<sub>i</sub>	2 2 1			1 1 3	1	2 1 2		/ 1 	7.1	
Totals	99	9 44			<i>.</i>	111	 																		
Chariton 23 October November December	43	3 16								1	3				2	3 2					3	1			5 3 4
Totals	10	3 46			1,	45		W.	3 / 5		, .	7.57	1-00		116		1		100						

BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING DECEMBER 31, 1914—Continued.

	Other causes	H 214	:	400		9 2 9		6470	:
	Homicides	*:::	:	:::					:
	Suicides	- :::	:			:: : =	:		
	Accidents		:	63 : :	:	123 :	:	::=	
	The puerperal state	111			:		:		
	Acute Nephritis and	8		-00	:	0140		21-4	
	Bright's Disease  Diarrhœa and Enteritis (under 2 years of age).	.: cs	:	<del>-</del> ::	<u>:</u>			:	
	Other diseases of respira-				:	:==			
	rory system  Pneumonia, Broncho-	: :rʊ		: <del> </del> :		:014	:	. : :01	
th.	pneumonia  Diseases of heart and	:: :==	:	: : :   E – –	•	613		::-	
dear	circulatory system		-	000		1 -18-1	:	: 1	
s of	Other diseases of the nervous system						:		
anse	Acute Anterior Poliomy- elitis								
Important causes of death	Epidemic Cerebrospinal Meningitis						÷		
port	Diabetes		:			н:н			:
Im	Cancer	: : :	:		:	611		::0	
	Other forms of Tuberculosis							1	
	Tuberculosis of the lungs	211		. 23 :	-:	121		<b>-</b> :::	2
	Influenza	<del>* : : :</del>							
	Diphtheria and Croup	:: =	:		:		:		
	Whooping Cough		:		:		4:		
	Scarlet Fever	7 :::			:		1	:::	
	Measles				:		:		
	Smallpox					:::			:
	Typhoid Fever	-::::	:	. : :			3		
Tot	al deaths during the	6 7 16	29	16 14 9	39	18 23 27	. 89	9	34
	uarter	Sign of the					1 27		y
Tot	al births during the	41 31 31	95	11 13 19	43	35 25 30	90	25 16 29	70
		832	:	811	:	302	:	297	*:
Pon	oulation, 1910					6 : : :			
- op		15		112		Q : : :		15	
	A Comment		1						: 11
				- : : :		• ; ; ;			:
	Counties.	er	:	er		er		er	:
	Com	Christian— October November December	Totals	Clark— October November December	Totals	Clay— October November December	Totals	October November December	Totals

Totals  Jefferson City— 11			6.				: : ; : : ;			1.7°.		i				  ····i	<u>2</u>		i				:::		:::	i 3
Toffenger City 11		51	14 .							1						 								.,,,		
October November		11 12 50	6 18 19	1 1							3 3 5		 4	∵i		i	í		2		· · · · i	: ( )	i			1 6 4
Totals		73	43								·				11.	 			3							
Cooper— 20 October		35 26 31	18			:::		1	<sub>i</sub>	<sub>i</sub>	 2 2	 i	3 3	i	\	$\frac{1}{2}$			1		1 4		i	<sub>i</sub>		4 4 3
Totals		92	50													 				24.	,					
Crawford— 13 October November December		27 17 26	12 7 9							7:	1 1	<sub>i</sub>	i i			 i	$\vdots \vdots $	3	1	1	]					1 4 1
Totals		70	28					· W					. (* )	: .		 				1.45	1112					
Dade 15 October November December		29 21 23	9 6 17	1 1 1			.:.	····i		 i							1	4					i			2 3 5
Totals		73	32						2							 	·							7		
Dallas 1: October November December	4	15 18 25	10 5 17			1					3		∵i			· · · · i	3			. 1		i 1				7 1 6
Totals		58	32		• • •		· · ·			¥ .									1						1.	1
Daviess         1'           October            November            December	- A - A - A	35 23 22	14 7 11	<sub>i</sub>			 N.:	7::			1		2 1 2			2 1 2		1	1 10	. 1		i	. 1	1 :::		3 4 3
Totals	T	80	32									1.0			Y-A	 	0.1	1.1			/.		÷			54

(STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING DECEMBER 31, 1914—Continued. BIRTHS AND DEATHS REPORTED IN MISSOURI

844 Other causes..... Homicides..... : : : Suicides..... Accidents..... The puerperal state.... Acute Nephritis and Bright's Disease..... 2018 Diarrhœa and Enteritis (under 2 years of age). Other diseases of respira-131 tory system..... .01 1041 HO Pneumonia, Broncho-pneumonia..... Important causes of death. Diseases of heart and circulatory system.... 211 : --SOH Other diseases of the .01 nervous system..... Acute Anterior Poliomyelitis..... Epidemic Cerebrospinal Meningitis..... Diabetes..... Cancer ..... Other forms of Tuberculosis..... :01 212 Tuberculosis of the lungs...... Influenza..... Diphtheria and Croup... Whooping Cough..... Scarlet Fever..... : : :: Measles.... Smallpox..... 10 co co Typhoid Fever..... 8601 0000 m-101 15 59 57 49 165 27 Total deaths during the quarter..... 127 102 155 20 27 15 10 23 232 86 384 67 Total births during the quarter..... 13,245 30,328 . 12,531 16,664 Population, 1910..... Dent— October.... November... December... Douglas— October.... November... December... October... November... December... Dunklin— October... November.. December... Totals.. Totals. Totals Totals

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١	-	^	_
•	•		1

November	29,830	62 49 45	27 22 21		i ::::				3	 <sub>2</sub>	:	5 3 	$\begin{vmatrix} 2\\1\\2 \end{vmatrix}$	<sub>i</sub>	::::		$\begin{array}{c} \dots \\ 1 \\ 2 \end{array}$	1 3 2	2		1	2 2 1	2 4 1		i 1	1 i	 8 4 3
Totals		156	70	11,																				.,.			 
Gasconade October November December	12,847	28 27 23	3 13 9		: : : : : : : : : : : : : : : : : : :					3		1		  i			 1 1	 2				i :	  2		i.i		 2 9 2
Totals		78	25	2																						.,.	 
Gentry— October November December		34 20 49	10 13 18		i			···i				2					2 5 1	i	 1 3		1 i		1 2 2		 i	∵i	 3 3 5
Totals		103	41											,												. , .	 
Greene October November December	28,630	42 39 38	13 14 14		3		•		\ \ \ \ \ \			1 1 1					4 1 2		1			2 i					 4 4 5
Totals		119	41		3																						 
Springfield— October November December		71 84 98	49 40 65		1		*					3	2 2 2		 i		3 4 1	4 2 4	3 8 10	3	2 1 5	2 3 .	3 2 3	···i	6 1 1		 12 12 16
Totals		253	154		W.																1		.).				 
Grundy— October November December		25 26 32	14 13 10	1	l l						]	1 1 2 1				1	2 1	2 1	1 2 2			i:	 ''i		1.	1 1 1	 4 5 2
Totals		83	37																								 
Harrison— October November December		55 47 48	22 14 21	2	2							i	 i				2 2 3	1 2	i		2	2 i .	2 1		2 i	···i	7 4 8
Totals		150	57			1			11.11	21.00	1				1,61	7 7 7	100	7 10				-					1

10 20 Other causes..... Homicides..... : Suicides..... Accidents..... O : The puerperal state.... Acute Nephritis and Bright's Disease..... Diarrhœa and Enteritis (under 2 years of age). . . . . Other diseases of respiratory system..... · 50 -1 HHO -10 · H 0 Pneumonia, Broncho-pneumonia..... 8 H 0 400 .01 · H 4 Diseases of heart and circulatory system.... of death. O . . . . Other diseases of the nervous system..... : Acute Anterior Poliomy-elitis.... Important causes : Epidemic Cerebrospinal Meningitis..... . : : Diabetes..... : Cancer..... 31, 1914—Continued. Other forms of Tuberculosis..... 3 ちるコ of Tuberculosis lungs...... ... : Influenza..... : : : Diphtheria and Croup... Whooping Cough..... . . : : : Scarlet Fever..... : : Measles..... Smallpox..... Typhoid Fever..... 5000 ರಾರಾರ 17 ∞~0 28 53 20 23 23 64 Total deaths during the quarter..... 102 8336 47 59 52 091 26 24 24 333 Total births during the quarter........ 27,242 8,741 14,539 15,653 Population, 1910..... Counties. Hickory— October.... November. December... october.... November... December... October.... November. December. Totals.. ovember Totals. December Totals. Howard-Totals

BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING DECEMBER

Howell— 21,06 October November December	40	14				 		i			2				 	1 1 1	1 1 3			2 2		`1 				7 6 3
Totals	. 121	45			1	71		1		,						7,00			,	15.5						1
Iron         8,56           October            November            December	22 22	- 7	· · · i					··· i		2		1 2			/ /	<sub>4</sub>	 1 2	<u>1</u>		i			2 			 2 5
Totals	63	32										1.			7.5.0								12 1			
Jackson 35,14 October November December December.	66	27 38 37	 2 1					2 1 1	 1 2	1 1 1		2 4 6				3 9 3	3 6 3	1 4 3	3		5 1 1		1 1	∵i		6 7 12
Totals	191	102															1		·			,				
Kansas City— 248,38 October November December	472	348						13 8 11	1		2	23	1	7		20 40 21	40 44 43		11	6	38	3		11	5 4 6	80 69 56
Totals	1,405	972									,								7							
Jasper— 45,78 October November December	68 64 75	49	2 1 1	H.				2	··i	5 7 6		2	 i 1			2 2 3	1 3 5	3 5 4		5	2 1		3 2 5		· i	7 18 17
Totals	. 207	126	,			4.	Page 1						1						(1.1)		7.05		4			
Joplin         32,073           October            November            December	70 74 51	46 47 34	2 3			<sub>i</sub>				7 5 8		4 4 2	 1			3 4 1	2 1 2	$\begin{array}{c} 1 \\ 6 \\ 9 \end{array}$	<sub>1</sub>	$\begin{bmatrix} 1\\3\\2 \end{bmatrix}$	$\begin{array}{c} 2\\ 4\\ 2 \end{array}$		4 1	3	2 1	10 7 5
Totals	. 195	127	W							1		1								.677/						5 . 1
Webb City— 11,81 October November December	. 26 29	13	1				··i	3 3		7	1					4 1 3	1		1.4.	3	 ''' i	i	1 i			3 2 3
Totals	77	48					10 1	,		312							A # 1							<u> </u>		

Other causes.....

10101

 $\infty \infty \omega$ 

0100

(STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING DECEMBER BIRTHS AND DEATHS REPORTED IN MISSOURI

Homicides..... Suicides..... Accidents..... The puerperal state.... A cute Nephritis and Bright's Disease..... Diarrhœa and Enteritis (under 2 years of age). · 01 01 Other diseases of respiratory system..... -1:0m Pneumonia, Bronchopneumonia..... Important causes of death. 100 .01 Diseases of heart and circulatory system.... 33 HOO HHO Other diseases of the nervous system..... Acute Anterior Poliomyelitis..... Epidemic Cerebrospinal Meningitis..... .01 Diabetes..... 121 SHO 211 31, 1914—Continued Other forms of Tubercu-ಣಾಣಾ .00 Tuberculosis of lungs..... Influenza..... :01 : Diphtheria and Croup... Whooping Cough..... Scarlet Fever..... : : : Measles..... : Smallpox..... HHO Typhoid Fever..... F40 17 24 16 57 252 Total death's during the quarter..... 102 138 136 248 248 248 63 40 33 Total births during the 17,363 878, 12,403 26,297 . . . . . . . . . . Population, 1910..... October.... November... December.... Counties. Knox— October.... November... December... October... November. December. Totals.. Totals.. Laclede— October... Totals.. November December Totals

Lafayette— October November December		84 45 51	27 32 37			 	 i		2	 1 1	2 2 1	2	2 2 1 2				1 3	1882	1 1 4	 <sub>i</sub>	1 4 1		3		2	3	10 5 16
Totals		180	96										1.1	1		 											
Lawrence October November December		49 57 47	18 23 25	1				1	···i	···i	3			1		. 3	3		1 1 .		1		1 1		j		7 8 12
Totals		153	66													 		,									
Lewis— October November December		17 11 17														 2	2				2		i : : :	j		Y.	3 8
Totals		45	33												49.5	 											
Lincoln— October November December		29 38 24						i	 1 1	···i			i			 	3 4		1 . 1 2 .	i	3		2		1 1		5 4 3
Totals		91	55													 								2.7			
November	25,253	59 36 43	21 22 34							 i	2					4 5			2 1 1		3 1 1	2					7 7 9
Totals		138	77													 								W.			
Livingston— October November December	19,453	35 52 41	20	···i						:::	i		2			 3		1	1 . 2 . 3 .		1 1		5	1 1	1 1		4 3 8
Totals		128	54			,	: 3									 		1.6									2
McDonald— October November December	13,539	7 8 28	1 4 10		:::		i	:::	<sub>i</sub>		: <sub>i</sub>	j	2														1 2
Totals		43	15							100				• • •		 											
			PERM		1	1	)-		TH	1 - 1 - 100		1000	1		,	1		1	,			,	,	1	,	, ,	

tapana na araka na katana kabangang kangna ang ada aka wali dangkana naka alikahat ang atawa ita palang ang an

BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING DECEMBER 31, 1914—Continued.

Counties.	Macon— October November December	Totals	Madison— October November December	Totals	Maries— October November December	Totals	Marion— October November December	Totals
llation, 1910	30,868		11,273		10,088		12,231	
l births during the	54 43 53 83	152	17 222 15	54	17 20 19	56	20 12 16	48
l deaths during the	26 16 20	62	8 01 9	27	10	19	16 12 10	38
Typhoid Fever	н :-						::3	
Smallpox			7					
Measles								
Scarlet Fever	<b>7</b> ::						35.21	
Whooping Cough				3				
Diphtheria and Croup		:			17.			
							F	
Tuberculosis of the	: ::		<b>-</b>		1 : 1		601-	
Other forms of Tubercu- losis		4:	:::			1.		
Cancer	1		73334		::::   = ::			:
Diabetes		:			1		000 -	
Meningitis		:	1					
elitis	111		P. 191					
Acute Anterior Poliomy-								
Other diseases of the	604		:HH			10.	000	
Diseases of heart and	, mm-		::F	:	. 811	:	211	:
Pneumonia, Broncho- pneumonia			2			3	-01-	
Other diseases of respiratory system		1	2 ::	3			-	
Diarrhœa and Enteritis (under 2 years of age).			30 St					
Bright's Disease		1		-:		40,		
The puerperal state			::::			· ·		
Accidents		:						
Suicides						:		
Homicides								1
	Accidents	Accidents	Accidents.  The puerperal state.  A c u t e Nephritis and Bright's Disease.  Diarrhœa and Enteritis (under 2 years of age).  Other diseases of respiratory system.  Pneumonia. Bronchopneumonia.  Diseases of heart and circulatory system.  Acute Anterior Poliomyelitis.  Epidemic Cerebrospinal Meningitis.  Diabetes.  Cancer.  Other forms of Tuberculosis.  Tuberculosis of the lungs.  Influenza.  Diphtheria and Croup.  Whooping Cough.  Scarlet Fever.  I de a th s during the arter.  I births during the arter.  Series of the surface	Accidents. The puerperal state.  A c u t e Nephritis and Bright's Disease.  Diarrhœa and Enteritis (under 2 years of age)  Other diseases of respiratory system.  Pneumonia. Bronchopneumonia.  Diseases of heart and circulatory system.  Other diseases of the nervous system.  Acute Anterior Poliomyelitis.  Epidemic Cerebrospinal Meningitis.  Diabetes.  Cancer.  Other forms of Tuberculosis.  Tuberculosis of the lungs.  Influenza.  Diphtheria and Croup.  Whooping Cough  Scarlet Fever.  Measles.  Smallpox.  Typhoid Fever.  I de a ths during the arter.  I births during the arter.  See See See See See See See See See Se	Acute Anterior Poliomyelitis  Cancer.  Other forms of Tuberculosis.  Tuberculosis of the lungs.  Influenza.  Diphtheria and Croup.  Whooping Cough.  Scarlet Fever.  I births during the arter.	Acute Nephritis and Bright's Disease.  Diarrhoea and Enteritis (under 2 years of age)  Other diseases of respiratory system.  Pneumonia, Bronchopneumonia.  Diseases of heart and circulatory system.  Other diseases of the nervous system.  Acute Anterior Poliomy elitis.  Diabetes.  Cancer.  Other forms of Tuberculosis.  Diabetes.  Cancer.  Other forms of Tuberculosis.  Influenza.  Diphtheria and Croup.  Whooping Cough.  Scarlet Fever.  I de a th s during the arter.  I births during the arter.  Sea 1 1 2 2 2 2 3 2 2 2 2 2 2 2 2 2 2 2 2 2	Accidents	Accidents

November	18,341	26 30 35	20					···i		<sub>i</sub>	1 3 2	1	1 2						2 . 2 .	 4		i		2		$\begin{bmatrix} 2 \\ 2 \\ 3 \\ \dots \end{bmatrix}$	i	$\begin{bmatrix} 4 \\ 6 \\ 4 \end{bmatrix}$
Totals		91	56								J		r			·	.4.			!		1.						
Mercer— October November December	12,335	27 20 22	5 10 8				i	·			/		i	100				1	i	2 1 1		j		1 i		i		$\begin{bmatrix} 1\\2\\1 \end{bmatrix}$
Totals		69	23								,			;							<u>.</u>							
Miller— October November December		16 31 36	7 15 7	1					<sub>i</sub>		i			. y				i	3 .	 2		2 1	1000	1 3	i			1 5
Totals	,	83	29										4,															
Mississippi October November December	14,557	40 26 43	14 18 16		31. 31.				i									i		3		4				1		4 2 5
Totals		109	48																									
November	14,375	24 27 19	12 10 12					 i	···i		i		. 1						3 2 1 .	1 1		2		1 1 1			i	2 5 2
Totals		70	34		14							.44.	710															
Monroe— October November December		33 24 18									3	2			 ::::	* () /		1	1 2 .	1		2 j		ż		. 1 i	1	6 4 4
Totals		75	40											.,	, .	1.												
Montgomery— October November December		26 32 25	12			À												3	31	2 2		. 1 2 1		1 i	i ::		3	7 1 6
Totals	175 199	83	42		97.5	W.		- 1							2 X	- 77	-	133				131 4				1 1 79	1	

# BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING DECEMBER 31, 1914—Continued.

William Television	1.3.0.1.3.1	1	12000			Files		7.7.	-		Y. Land		94-		100					11.55	411					1	100
	Pop	Tot	Tot										Iı	npo	rtant	caus	es of	deatl	h.								
Counties.	Population, 1910	Total births dun quarter	Total deaths du quarter	Typhoid Fever.	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and	Influenza	Tuberculosis clungs	: º	Cancer	Diabetes	Epidemic Cerel Meningitis	; P	Other diseases nervous system	Diseases of hea circulatory syst	Pneumonia, Br pneumonia	Other diseases of tory system	Diarrhœa and l (under 2 years	Acute Nephr Bright's Disea	The puerperal st	Accidents	Suicides	Homicides	Other causes
		during the	during the					h	Croup		of the	Tubercu-			Cerebrospinal is	Poliomy-	of the	heart and system	oncho-	respira-	Enteritis of age).	itis and	state				
Morgan October November December	12,863	16 22 15	6 9 9		 i : : :						···i		i				:::: i	····i	····i	i	1 	1 1 1	 	2	 i		2 4 4
Totals	,	53	24			3.			1.	3.									Ca.A.			7			111		
New Madrid— October November December	19,488	54 37 55	18 9 25		i : : :				4		 1 2				 ::::		 1 2	 1 2	i i	1 i	4 1 3	2		2			7 4 9
Totals		146	52			7		1.5		. "										1							
Newton— October November December	27,136	63 43 40	16 14 23		1				 1 3		 5						4 1	$\frac{1}{2}$	4			1	i	2 2		:::	9 6 5
Totals		146	53	14		2.1.					34	25.					. A.				11.						
Nodaway— October November December	28,833	53 44 45	24 19 25		3					,	2	i	· · · · · · · · · · · · · · · · · · ·	 i			333	2 1 4	2 3		1 1	1 1 2		1 1 2	. 1		7 8 6
Totals		142	68														5	27.11									

2	
7	7

Oregon— October November December	14,681	$\frac{14}{30}$	10 12 12	 1 1		:::			$\begin{bmatrix} 1\\3\\1 \end{bmatrix}$	:::	1	i	$\begin{vmatrix} 1 \\ \vdots \\ 2 \end{vmatrix}$				<u>1</u>	1			1 1						$\begin{bmatrix} 2\\6\\2 \end{bmatrix}$
Totals		76	34			3	: . :			1	50	11.			1.1					//3			<b>.</b>				
Osage— October November December		35 32 47	7 11 9	∵i	- T. W. C.				· · · i				 1 1		 /		i	$\frac{1}{2}$	1					$\frac{1}{1}$	i		1 2 2
Totals		114	27						1.0							7				2.							
Ozark— October November December		26 30 23	6 14 8	i								l		:::			<u>2</u>	<sub>i</sub>	i								2 8 3
Totals		79	28			:4:																					3,400
Pemiscot— October November December		31 52 21	28 38 20	1				1		···i	:	1 13		i i			<sub>2</sub>		3 5 7		. 2			2 1		2 3	10 17 6
Totals		104	86	::	٠																						
Perry— October November December		38 32 28										1					i	i	i		1 1						8 4 4
Totals		98	30			1					2.3	1	·	1 - 1													
Pettis— October November December		14 16 26		::::													i	<u>2</u>	$\frac{1}{2}$				i				1 3 3
Totals		56	22																.,								
Sedalia— October November December		46 32 58	30 24 28	1				 	6 2			3	2	· · · · i			<sub>2</sub>	2 2 2 2	4 2 3		1	-	1		····i		6 7 6
		136	00	7013								1	1 3		7 7									1			1

BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING DECEMBER 31, 1914—Continued

	Counties.	helps— October— November— December	Totals	Ike— October November December	Totals	latte— October November December	Totals	olk— October November December	Totals	
Pop	ulation, 1910	15,796		22,556		14,429		21,561		
	al births during the	228	84	32 31 31	88	40 27 26	93	2222	122	
	al deaths during the uarter	15 23	43	14 24 20	58	10 11 4	. 25	10 115 16	41	
	Typhoid Fever	:		1		1			1	
	Smallpox						:		1:	
	Measles				6		:		1:	İ
	Scarlet Fever				4:	3 3			:	İ
	Whooping Cough			:03						1
	Diphtheria and Croup	Н.				V		173	1	1
	Influenza		3					Т.	:	1
	Tuberculosis of the lungs	<b>-</b> :-	1	11.0		:T:	-:	:01	:	Í
	Other forms of Tubercu- losis								1	
I	Cancer	:: "		:00				- :-	:	
npoi	Diabetes			□ C1 : :		<b>5</b>		2 ::	1	
rtan	Epidemic Cerebrospinal Meningitis								:	
t cau	Acute Anterior Poliomy- elitis		i							
ses of	Other diseases of the nervous system				3					-
Important causes of death.	Diseases of heart and circulatory system	:		0-1	:			1 1 8 3	:	
h.	Pneumonia, Broncho- pneumonia	4		113		22 .	:	2::		
	Other diseases of respiratory system	HH:	4		1					
	Diarrhea and Enteritis (under 2 years of age).	HHH		7				<b>"</b>		
	A c u t e Nephritis and Bright's Disease	:64		144				0000		
	The puerperal state							:::		
	Accidents	. T :		121			:	-4	:	
	Suicides					7:17			:	
	Homicides			317	-	2 10		1111	:	
	Other causes	-mx	:	113		13:1		4-16	:	

Pulaski— October November December		33 26 27	8 8 9					i		 						1 2		· · · i				1 1 1	ı i			4 <u>2</u>
Totals		86	25							 	· · · ·				2									• • •	• • •	····
Putnam— October November December		25 19 23	8 9 9	1 2 1						 			···i	::::			1			i		i ``i				2 3 2
Totals		67	26	1						 .,							• • • •						• • •		• • •	• • • •
Ralls—OctoberNovemberDecember		19 17 15	9 6 11					i.i.	5	 ] ] 1		 1			: ::::	<sub>i</sub>	1	i				2				4 3 3
Totals		51	26							 	No.								· · ·							
Randolph— October November December		30 42 21	12	::::				,9 ,9 ,9 ,1	:::	2		1			::::	1	]	i i	1	3 1		3				6 2 4
Totals		93	36				3.4			 												17				
Moberly— October November December		23 27 14	8						···i	2 1 4		 i	 ''i			$\cdots \frac{2}{1}$	2		i	1			1	:::		8 3 3
Totals		64	38							 																,
Ray— October November December		52 48 35	14 23 16	2						2		2				 2 2		3		2		i 2 				5 5 4
Totals		135	53							 1.4.1	N T	5.1									1	1		14:		
Reynolds— October November December		27 16 33	4 5 7						∵i		1											1	:::			2 4 4
Totals	*,	76	16							 							/									
	- 6 K	A LOS	AL STATE		1	1	1	100	N. P.	1		1	1	-	1	1	,		1	1 20			200	197	Pri	

AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING DECEMBER 31, 1914—Continued BIRTHS

01400 01000 Other causes..... Homicides..... Suicides..... Accidents.... The puerperal state.... 2020 A cute Nephritis and Bright's Disease..... 132 Diarrhœa and Enteritis (under 2 years of age). Other diseases of respiratory system..... 31. 0000 Pneumonia, Broncho-pneumonia..... death. ---Diseases of heart and circulatory system.... of 900 Other diseases of the causes nervous system..... : Acute Anterior Poliomyelitis..... Important ... Epidemic Cerebrospinal Meningitis..... Diabetes..... · 60 Cancer.... Other forms of Tubercu-222 Tuberculosis of the lungs..... Influenza..... ·00 2113 Diphtheria and Croup... Whooping Cough..... Scarlet Fever..... : : Measles.... Smallpox..... 2000 .01 .01 Typhoid Fever..... 11 25 11  $\frac{16}{20}$ 58  $\frac{9}{18}$ 35 29 121 Total deaths during the quarter.... 209 13 104 38 50 53 141 32 29 29 96 7471 Total births during the quarter.... 16,412 13,099 24,695 35,738 Population, 1910..... October.... November... December... October..... November... December... Counties. ctober....
November...
December... Francois November. December. Totals.. October Charles Totals.. Totals. Totals.

October November	10,607	25 21 32	11 7 5							2 2 2						1				1 1		2 i	1 1			3 2 1
Totals	34,744	78	23	 2 7 7	. ,		137	5 1		.11.					7.	1										
OctoberNovember	82,417	125 140 188	106						 i	33	<u>2</u>	65	1			5 8 14	12	11	2	9 2 1	. 8	3 · · · i	5 5 8	5 3	3	14 14 17
Totals		453	339	 			N.																			
	29,448	55 48 68						2 		2 2 3	1	2 1 1	2			2 6 3	2 1 1	2	2	2	2 2 2			∵i		5 8 8
Totals		171	77	 	200										(				S							
Schuyler— October November December	9,062	26 16 27										∵i				 1 2						1				1 1 2
Totals		69	19	11.				. 1.1																		
Scotland October November December		23 16 16	7 10 9							i		i				2	- 4				j		1 :::			24
Totals		55	26	 						2	2.4.								2.7	2.2.			,			
Scott— October November December		83 36 69	24 21 28				···i	4		2 1 2	1	1 1				<sub>i</sub>		14		4				· · · · · · · · · · · · · · · · · · ·		11 8 11
Totals		188	73	18.0		1								7				400					٠			
Shannon— October: November. December.		35 21 28	5 9 4							1	i i					<sub>i</sub>						2			1	3 3 2
Totals		84				1	1	1			-	-	-	-	-			_								-

## BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING DECEMBER 31, 1914—Continued.

	Pop	Tota	Tota qu										Imp	orta	int ca	uses	of de	ath.									
Counties.	Population, 1910	Total birth's during the quarter	Total deaths during the quarter	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tubercu- losis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	Other diseases of the nervous system	Diseases of heart and circulatory system	Pneumonia, Broncho- pneumonia	Other diseases of respiratory system	Diarrhoea and Enteritis (under 2 years of age).	A c u t e Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
Shelby— October. November. December.		16 29 26	8 16 11								2 2	<u>2</u>	4	ii			23	i				i		 i	 		3 6
Totals		71	35					0.5			,							ity i						n).	f		
Stoddard— October November December		91 70 86	40 32 45	2					1 3 1		1 2 3	i	2 i	1 1	::::	1	1 1 3	i	3 6 11	1	5 4 1	···i	···i	1 i			22 11 13
Totals		247	117	111	(· · ·				07					×													
	11,559	16 22 20	7 3 8								 i						, 1 1	<sub>i</sub>	1 1	1	i	$\frac{2}{1}$		i			$egin{array}{c} 2 \ \dots \ 4 \end{array}$
Totals	.1.v	58	18	. ,	1,00	:						, ,							1.5				14			10	1.,
	18,598	45 54 41	17 19 19	1	1					1 · · i	i		1 2				i	1 3 2	<sub>i</sub>	1	4	2		2 1 1	···i		6 7 10
Totals		140	55	110			. 7.																				

- 9	C	ر	
	Ĺ		

October	8,827	50 37 51 138 45 41 55	13 18 16 47										 	`.		!									7
October November December 28  Vernon 28  November December Totals	8,827	37 51 138 45 41	18 16 47 35	1					. V		177		 									-			
Vernon 28 October November December Totals	8,827	45 41	35							23		1 1			1 1 1	2	1 2 6	1	1 1	2 1		1 1 1			$\begin{array}{c} 4 \\ 8 \\ 3 \end{array}$
October November December Totals		41		7			 						 						,						
	7		$\begin{array}{c} 44 \\ 25 \end{array}$	<sub>i</sub>	1			4		5	i	3 2	 		2 4 3	3		3	1			. 6			10 10 8
Table 1		141	104				 						 		,			7							
Warren— 9 October November December		6 18 27	8 8 10	1		0-14		···i		1		i			3		$\begin{array}{c} 1 \\ 3 \end{array}$			1					5 2 6
Totals	07. C.	51	26				 			100			 3.47						1						
Washington 13 October November December		41 29 20	18 15 14	2 3	3				···i	2		3 1 1			 2 3	i	$egin{array}{c} & & & \\ & & 2 \\ & 2 \end{array}$			1		1	i		3 1 2
Totals		90	47	.,		2	 0						 						, . V.				,		
Wayne 15 October 15 November December 15		36 57 45	22 13 26	· · · i			7	1 2		3		1 i			····i i	1	<sub>7</sub>	1 1 1	11	1 1	1 :::	3		<u>i</u>	7 4 10
Totals		138	61				 <b></b>	15,9%					 	4,73		3									
Webster— 17 October November December	34	36 56 28	13 21 8	1 2				$egin{array}{c} 1 \\ 2 \\ \dots \end{array}$		2 3 1	i	2		7.4		ii	i i			<sub>i</sub>	. 7.		1	i	6 8 5
Totals		120	42				 			12			 	7503			37.1		To Vi						

## BIRTHS AND DEATHS REPORTED IN MISSOURI (STILLBIRTHS NOT INCLUDED) DURING THE QUARTER ENDING DECEMBER 31, 1914—Continued.

Counties.	Pop	Tot	Tot	Important causes of death.																							
	Population, 1910	Total births during the quarter	Total deaths during the quarter	Typhoid Fever	Smallpox	Measles	Scarlet Fever	Whooping Cough	Diphtheria and Croup	Influenza	Tuberculosis of the lungs	Other forms of Tubercu- losis	Cancer	Diabetes	Epidemic Cerebrospinal Meningitis	Acute Anterior Poliomy- elitis	Other diseases of the nervous system	Diseases of heart and circulatory system	Pneumonia. Broncho- pneumonia	Other diseases of respiratory system	Diarrhœa and Enteritis (under 2 years of age).	A c u t e Nephritis and Bright's Disease	The puerperal state	Accidents	Suicides	Homicides	Other causes
Worth—	8,007							-			(0								- 1 -								
October November December		15 9 16	$\begin{array}{c}2\\7\\7\end{array}$	i		11:	• • • •						1				4	2	1	1	1		···i				2
Totals		40	16				.,														,						
Wright— October November December		29 53 49	12 13 8						1		2 3 1						i	2	2 2 2		 1 1	i		1			2 4 2
Totals		131	33								11.5																
St. Louis City— October November December		1,327 $1,275$ $1,369$	822 875 931	7			10	···i	13 46 40		71 101 77	12	39 46 41	9		1	61 79 79	113	98	22	23	86 103 113	5		34 20 36	11	
Totals		3,961	2,628				.V.																				C.v.
Totals for State— October November December		6,221 5,892 6,346	3,086 3,276 3,515	98		3	8 15 14	8 8 8	84 116 102	3 10 35	289 318 335	30	155 168 178	27		4 2 5	230 341 509	323	281	68	136	297	23	150 119 99	54	27	815
Grand totals		18,459	9,877	278		3	37	24	302	48	942	114	501	96	4	11	880	912	877	269	464	823	83	368	203	74	2564